This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

B 1,070,706

GENERAL LIBRARY
UNIVERSITY OF MICHIGAN

QH
1
.A15

PROCEEDINGS

OF THE

ACADEMY OF NATURAL SCIENCES

OF PHILADELPHIA.

VOL. IV. 1848, 1849.

PHILADELPHIA.
PRINTED FOR THE ACADEMY,
By Merrihew & Thompson, 7 Carter's Alley.
1850.

PROCEEDINGS

OF THE

ACADEMY OF NATURAL SCIENCES

OF PHILADELPHIA.

VOL. IV. 1848, 1849.

PHILADELPHIA.
PRINTED FOR THE ACADEMY,
By Merrihew & Thompson, 7 Carter's Alley.
1850.

nw

INDEX TO VOLUME IV.

Abert, Lieut. J. W., don. to lib., 111.
Adams, C. B., don. to lib., 111, 263, 265.
Adams, Mr., don. to mus., 137.
Agassiz, Prof. Louis, don. to lib., 111, 176.; on the distinction between the fossil Crocodiles of the green sand of New Jersey, 169; letter from to Dr. Gibbes in relation to Dorudon serratus, 4.
Alexander, Dr., don. to mus., 241.
Allinson, Geo. B., don. to mus., 109.
American Acad. of Arts and Sciences, don. of memoirs of, 143.; of Proceedings, 32, 82, 243.
Amer. Philosoph. Soc., don. of Transactions of, 31; Proceedings of, 54, 189, 261; Resolution by to deposit its collections of organic remains with the Acad. Nat. Sci., of Philada., 247.
American Journal of Agriculture and Science, don. of by editors, 30, 31, 32.
Anderson, J. D., don. to mus., 109, 241.
Asiatic Society of Bengal, don. by of Journal, 81.
Ashmead, Samuel, don. to mus., 29, 52, 69, 163, 176, 241; remarks on a peculiarity in the calcareous spar from Rossie Lead mines, 6.
Ashmead, H. E., don. to mus., 109.
Audubon, J. J., don. to mus., 164.
Australian Museum, don. to mus., 175.
Ayr, William, don. to mus., 205.

Bache, Prof. A. D., don. to lib., 189.
Bachman, Rev. Dr., Notes on the generation of the Virginian Opossum, 40.
Baird, Prof. S. F., don. to mus., 29, don. to lib., 263.
Babbage, Charles, don. to lib., 31, 81.
Beasley, Theophilus, don. to mus., 163.
Berendt, Dr., don. to lib., 166.
Blanchard, M. Émile, don. to lib., 111.
Bovy, Mons., don. to mus., 29.
Boston Society of Natural History, don. of Journal of, 82; of Proceedings, 111.
Bourcier, M., don. to mus., 137.
Boyé, Dr. M. H., don. to lib., 191.
Bogerslawski, Prof., don. to lib., 243.
Bridges, Dr. Robert, don. to lib., 190; don. to mus., 138, remarks on estimates relating to the length of the year, 58.
Bryan, Wm. C., don. to mus., 109.
British Association, don. to lib., 55.
Browne, Peter A., paper read by, entitled "Reasons for believing that animal torpidity is influenced by electrical currents," 2.
Bristol Institution, don. to mus., 163.
Budd, Charles T., don. to mus., 164, 175.
Burlington College, don. to mus., 109.
Butcher, William, don. to mus., 109.
By-Laws, amendments to, 50, 148.

Calcutta Journal of Nat. Hist., don. of by editors, 177.
Cantor, Dr. Theodore, don. to lib., 81.
Carpenter, Dr. Wm. S., don. to mus., 137.
Cartwright, Dr. Samuel, don. to lib., 242.
Carson, Dr. Joseph, don. to mus., 109.
Carey, John, don. to lib., 32.
Cassin, John, remarks on the management of monkeys in captivity, 3; description of new species of Cyanocorax, 26; descriptions of new species of Vidua, Briss., Euplectes, Sw., Pyrenestes, Sw., and Pitylus, Cuv., 65; description of a new Tanagra, 85; Catalogue of Birds collected by Mr. Wm. S. Pease, 87; description of Owls, supposed to be new, 121; descriptions of new species of Nyctale and Sycobius, 157; Notes of an examination of the family Vulturidæ, 158; remarks on a specimen of Anas Rafflesii from Louisiana, 195; Descriptions of new species of Caprimulgidæ, 236; special report, as Curator, on the Ornithological collection of the Academy, 256.
Chambers, Andrew R., don to mus., 79.

Club of Members, don. to mus., by, 29.
Committees, Scientific, for 1848, 2: for 1849, 148.
Committee on Mr. Nuttall's descriptions of new plants from the Rocky Mountains and California, collected by W. Gambel, 3; on Dr. Leidy's paper on some bodies in the Boa constrictor resembling the Pacinian corpuscles, 3; on Mr. Cassin's descriptions of new species of Cyanocorax, 7; on Dr. Bachman's Notes on the generation of the Virginian Opossum, 35; on Dr. Hallowell's descriptions of two new species of Onychocephalus from Africa 35; on Dr. Mydleton Mitchell's remarks on the generation of the Opossum, 36; on Mr. Henry C. Lea's catalogue of the Tertiary Testacea of the U.S., 36; on Dr. Leidy's description of Merycoidodon Culbertsonii, 36; on Dr. Dickeson's paper, Microscopic examination of the development of the fœtus of the Succinia amphibia, 57; on Major M'Call's Notes on Mexican birds heretofore not fully dedescribed, 58; on Mr. Conrad's observations on new Eocene fossils from Vicksburg, Mississippi, 58; on Dr. R. W. Gibbes Monograph of the fossil Squalidæ of the U. S., 65; on Mr. Cassin's descriptions of new species of Vidua, Euplectes, Pyrenestes and Pitylus, 65; on Dr. Gambel's description of a new Mexican Quail, 74; on Dr. Gambel's descriptions of new Californian Quadrupeds, 76; on Dr. Hallowell's Notes of the post-mortem appearances observed in a Cynocephalus porcarius, 83; on Mr. Cassin's description of a new Tanager from the Rio Negro, 84; on Mr. Pease's paper on the Geology and Natural History of part of Mexico, 85; on a Catalogue of Mexican birds by the same, 85; on Mr. Conrad's descriptions of new species of recent Shells, 120: on Dr. Gambel's Catalogue of the Columbidæ in the collection of the Academy, 120; on Mr. Cassin's descriptions of new Owls, 120; on Dr. Gambel's Contributions to American Ornithology, 120; on Dr. Hallowell's description of a new Salamander from California, 120; on Dr. Morton's Additional observations on a new living species of Hippopotamus, 149; on Mr. Cassin's Catalogue of the Vulturidæ and Strigidæ in the collection of the Academy, 150; on Mr. Cassin's descriptions of new species of Nyctale and Sycobius, 150; on Mr. Conrad's descriptions of new fresh-water and Marine Shells, 150; on Mr. Cassin's notes on the Vulturidæ and Strigidæ in the collection of the Academy, 150; on Dr. Hallowell's notes of a post-mortem examination of a Cynocephalus, 150; on Dr. Gambel's remarks on the Birds of Upper California, 169; on Dr. Gambel's Notes on the Pidgeons, 169; on Prof. Haldeman's description of new species of Cryptocephalus, 169; on Dr. Keller's memoir on Ciliary cells of some marine naked Mollusca, in embryo, 169; on Dr. Meigs' observations on the reproductive organs and on the fœtus of the Delphinus nesarnak, 172; on Dr. Leidy's remarks on the fragments of Tapirus Americanus fossilis in the collection of the Academy, 179; on Dr. Hallowell's description of a new species of Eryx, 183; on Dr. Savage's communication on the Driver Ants of West Africa, 184; on Prof. Haldeman's descriptions of new species of Hymenoptera, 193; on Dr. Savage's paper on the Termitidæ of West Africa, 209; on Mr. Van Amringe's letter proposing a new system of Zoological classification, 224; on Mr. Cassin's descriptions of new species of Caprimulgidæ, 234; on Dr. Gibbes' descriptions of new species of Myliobates from the Eocene of South Carolina, 245; on Dr. Leidy's descriptions of two species of Distoma, 247; on Dr. Leidy's description of new Entophyta, 248; on Dr. Le Conte's paper "an attempt to classify the Longicorn Coleoptera of America north of Mexico," 248; on Dr. Morton's paper on the size of the brain in the various races of Man, 248; on a paper by Professor Baird, Revision of the North American Tailed-Batrachia, 204.
Committee on Dr. Savage's paper on the Driver Ants of West Africa, observations by, 200.
Conrad, T. A., don. to mus., 138; don. to lib., 30; Descriptions of two new genera, and new species of recent shells, &c., 121; descriptions of new fresh-water and marine shells, 152.
Cook, John, don. to mus., 69; don to lib., 205.
Cooper, C. C., don. to lib., 52.
Correspondents elected:
Blythe, Edward, Calcutta, 78.

Brydges, Sir Harford, England, 68.
Cantor, Dr. Theodore, Bengal Medical Service, 78.
Cobb, Prof. J., Kentucky, 107.
Doane, Rt. Rev. George W., New Jersey, 107.
Dowler, Dr. Bennett, New Orleans, 68.
Ehrenberg, Chr. Gotfried, Berlin, 51.
Eschricht, Prof., Copenhagen, 51.
Fischer, de Waldheim M., Moscow, 107.
Fremont, Col. J. C., U. S. A., 51.
Goodsir, John D., Edinburgh, 260.
Henderson, Dr. A. A., U. S. N., 71.
Holmes, Francis S., Charleston, S.C. 78.
Jackson, Dr. R. M. S., Pennsylvania, 74.
Jones, Dr. Wm. L. Riceboro, Geo., 51.
Kaup. Jean Jacq., Darmstadt, 28.
Kirtland, Dr. J. P., Ohio, 107.
Michel, Dr. Mydleton, Charleston, 162.
Porcher, Dr. Francis P., S. Carolina, 224.
Ravenel, Henry W., S. Carolina, 162.
Scoresby, Rev. Wm. D. D. England, 28.
Schouw, Prof. J. Fred., Copenhagen, 51.
Sharpey, Wm. S., London, 260.
Strickland, Hugh E., London, 78.
Shumard, Dr. Benj. F., Kentucky, 107.
Tiedemann, Dr. Frederick, Hiedelberg. 64.
Tuckerman, Edward, Massachusetts, 107.
Van Amringe, Wm. F., New York, 68.
Verreaux, M. Jules, Paris. 149.
Wood, Dr. W. Maxwell, U. S. N., 3.
Yandell, Dr. L. P., Kentucky, 107.
Culbertson, Joseph, don. to mus, 52.
Curators, report for 1848, 132; for 1849, 254; announcement by of reception of a collection of Sivalik fossils from the East India Company, 75.
Cramer, Charles, don. to lib., 30, 110.

Dallas, George M., don. to lib., 55, 81.
Dana, R. H., don. to lib., 51.
Dana, J. D., don. to lib., 32, 212.
Dana, S. L., don. to lib., 112.
Dantzig Nat. Hist. Society, don. to lib., 166.
Davenport, Mrs., don. to mus., 137.
Dawson, Dr., of Phila., don. to mus., 109.
Dawson, J. W., of Pictou, N. S., don. to mus., 69; Notes of specimens of the Wheat Midge from Nova Scotia, 210.
Denny, Henry, don. to lib., 31, 166, 242.
Desilver, Thomas, don. to mus., 261.
Dewey, William, don. to mus., 79.
Dickeson, Dr. M. W., don. to mus., 29; don. to lib., 31.
Dillwyn, L. W., don. to lib., 140, 165.
Dix, J. L., don. to lib., 113.
Doubleday, Edw., don. to mus., 109, 110.
Dowler, Dr. Bennett, don. to lib., 112, 166, 188, 265.
Dundas, James, don. to mus., 176.

East India Company, don. to mus., 79.
Election of Corres. and Rec. Secretaries, 71; of Record. Sec., 153.
Eyre, M. D., don. to mus., 138.

Faraday, Michael, don. to lib., 189.
Fisher, J. Coleman, don. to mus., 241.
Fisher, Thomas, don. to mus., 51.
Fischer, de Waldheim M., don. to lib., 51, 265.
Fitton, Wm. Henry, don. to lib., 161.
Fletcher, Charles S., don. to mus., 138.
Fraser, John F., don. to lib., 176.
Fremont, Col. J. C., don. to lib., 111.

Gambel, Dr. William, don. to mus., 175; don. to lib., 54; observations on some birds from Florida, collected by Dr. Hermann, 71; description of a new Mexican Quail, 77; contributions to Amer. Ornithology, 126; resignation as Record. Sec., 179.
Gartland, F. X., don. to mus., 187.
Geneva Nat. Hist. Society, don. of memoirs of, 81.
Germain, L. J., don. to mus., 51, 109, 137.
Gibbes, Dr. R. W., don. to mus., 109; don. to lib., 166, 205; letter to from Prof. Agassiz in relation to Zeuglodon cetoides, 4; letter from to Dr. Morton on same subject, 57.
Gilliss, Lieut., U.S.N., don. to lib., 205.
Gliddon, George R., don. to mus., 69; don. to lib., 143.
Goddard, Dr. Paul B., don. to mus., 29, 187.
Gould, Dr. A. A., don. to mus., 163; don. to lib., 111.
Gourlie, Wm. Jr., don. to mus., 163.
Graff, Mrs. C. H, don. to mus., 138.
Grant, Dr. W. R., don. to mus., 110.
Gray, Dr. Asa, don. to lib., 32, 176.
Gray, J. E., don. to lib., 81.

Griffith, Dr. R. E., don. to mus., 51, 69, 262; dep. in lib., 52, 54, 55, 56, 71, 81, 112, 140, 142, 164, 165, 176, 178, 205, 206, 243, 244, 266.
Griffith, M. E., don. to mus., 163.

Hagedorn, Mr., don. to mus., 187.
Haldeman, S S., don. to mus., 109; don. to lib., 32, 55, 82, 244, 269; remarks on the fibrous lava from the Hawaiian Islands, 5; descriptions of new species of Cryptocephalinæ, 170; descriptions of some new Hymenoptera, 203.
Haldeman, Lieut., don. to mus., 109.
Hallowell, Dr. E., don. to mus., 51, 109, 241; descriptions of two new species of Onychocephalus from Africa, 59; post-mortem appearances observed in a Cynocephalus papion, 62; post-mortem examination of a Cynocephalus porcarius, 86; on a new Salamander from Upper California, 126; post-mortem exam. of a Cynocephalus, 151; correction of an error in the locality of the Salamander described at page 126, 183; description of a new Eryx from Madras, 184; remarks on the young of Coluber venustus, 245.
Hare, Dr. Robert, don. to lib., 32.
Harris, Edward, don. to mus., 79, 109, 241.
Harrison, Mr., don. to mus., 187.
Hays, Dr. Isaac, don. to lib., 244.
Hazzard, H., don. to mus., 187.
Heerman, Dr., don. to mus., 30, 81, 137, 175.
Hembel, William, don. to mus., 164; don. to lib., 143, 243; letter declining a re-election as President, 247; resolutions by Academy relative thereto, 248.
Henderson, Dr. A. A., don. to mus., 138.
Henry, Dr. Bernard, don. to mus., 261.
Heuland, H., don. to mus., 137.
Historical Soc. of Penna., don. of Proceedings of, 31.
Hobson, William, don. to mus., 69.
Holmes, Francis S., don. to lib., 143.
Horsfield, Dr. Thomas, don. to mus., 80; don. to lib., 82.
Howard, John G., don. to mus., 205.

Imperial Soc. of Nat. of Moscow, don. of Bulletin of, 54, 142, 243, 269.
Imperial Mineralog. Soc. of St. Petersburg, don. to lib., 177.

Jackson, Dr. J. B. S., don. to lib., 55.
Jackson, Dr. Chas. T., don. to lib., 31, 72.
Jameson, William, Jr., don. to mus., 51.
Johnston, Prof. J., don. to mus., 164.
Johnson, Prof. W. R., don. to lib., 70, 177, 189; communication from, 84.
Jones, G. N., don. to mus., 79.
Jones, Dr. Wm. L., don. to mus., 52.
Journal of Indian Archipelago and Eastern Asia, don. of by Editor, 32, 52, 70, 81, 138, 191, 243, 269.

Keller, Dr. Wm., on ciliary cells in some marine naked Mollusca in embryo, 173; remarks on calculi from the bladder of the whale, 180; analysis of the same, 185.
Kilvington, Robert, don. to mus., 30; don. to lib., 110, 111.

Lacordaire, Th., don. to lib., 138, 191.
Lambert, John, don. to mus., 29, 80; don. to lib., 31, 72.
Lea, Isaac, don. to lib., 178.
Lea, Henry C., catalogue of the Tertiary Testacea of the United States, 95.
Le Conte, Dr. John L., don. to lib., 265.
Lepsius, Prof., don. to lib., 189.
Leeds Literary and Philosoph. Society, don. to lib., 31.
Leidy, Dr. Joseph, don. to mus., 110, 261; don. to lib., 31, 52, 138, 139, 143, 178, 189; on the existence of the eye in the perfect Cirrhipoda, 1; remarks on the hair of a Hottentot boy brought to Philada. by Capt. Chase, 7; on certain bodies resembling Pacinian corpuscles in the Boa constrictor, 27; on a new fossil genus and species of Ruminantoid Pachydermata, Merycodoidon Culbertsonii, 47; on the development of the Purkinjean corpuscle in bone, 116; on the existence of the intermaxillary bone in the embryo of the human subject, 145; on the Tapirus Americanus fossilis, 180; on the existence of Entophyta in healthy animals, as a natural condition, 225; on the odoriferous glands of the Invertebrata, 234; descriptions of new genera and species of Entophyta, 249.
Letters from individuals:
  Allinson, George B., 84.
  Bache, Prof. A. D., 73.
  Bancroft, Hon. George, 57.
  Beck, Dr. T. Romeyn, 245, 248.
  Berendt, Dr., 150.
  Berzelius, the Baroness, 147.
  Blythe, Edward, 183.
  Bowman, A. H., 65.

Brown, Richard, 36, 74.
Cantor, Dr. Theodore, 73.
Carpenter, Dr. Wm. M., 1.
Cautley, Major P. T., 120.
Cobb, Prof. J., 150.
Dana, J. B., 149.
Denny, Henry, 2.
Dowler, Dr. Bennett, 84.
Eschricht, Prof., 184.
Faraday, Michael, 35.
Fischer de Waldheim, M., 195.
Foulke, William P., 247.
Fremont, Col. J. C., 76.
Gibbes, Dr. R. W., 1, 179.
Gilliss, Lieut. J. M., 120.
Greex, John A., 84.
Hembel, William, 224, 217, 219.
Henderson, Dr. A. A., 83.
Hildreth, Dr. S. P., 1.
Holmes, F. S., 83, 84.
Horsfield, Dr. Thomas, 73, 115, 172.
Jameson, William, 184.
Jackson, Dr. Charles T., 5.
Jackson, Dr. R. M. S., 84.
Johnson, Walter R., 84.
Jones, Dr. Wm. L., 65.
Kaup, J. J., 83.
Kenworthey, Dr. C. T., 149.
Kern, Richard H., 245.
Lacordaire, Prof. Th., 115, 194.
Leidy, Dr. Joseph, 73.
McMinn, J. M., 216.
Michel, Dr. Mydleton, 172, 183.
Morse, A. H., 224.
Motchaulsky, M. Victor, 219.
Nicholson, Dr. Charles, 115.
Norman, Benj. M., 84.
Parkinson, Caspar, 231.
Porcher, Dr. F. P., 215.
Prince de Wied, 193.
Ravenel, Henry W., 172, 218.
Redfield, Wm. C., 39.
Savage, Rev. T. S., 5, 35.
Scoresby, Rev. Wm., 76.
Selby, Prideaux J., 36.
Shelley, Dr. Joel Y., 1.
Shumard, Dr. Benj. F., 145.
Smith, Dr. H., 145.
Smith, Joseph, 36.
Squier, E. George, 172.
Strickland, Hugh E., 115.
Sturm, F. and J. W., 245.
Sturm, Prof. J., 65.
Thompson, William, 5.
Tuckerman, Edward, 115.
Van Arringe, Wm. F., 83.
Verreaux, M., 183.
Wood, Dr. Wm. Maxwell, 6.
Yandell, Dr. L. P., 145.
Letters from Societies, &c.:
  Amer. Acad. of Arts and Sciences, 120.
  Amer. Philosoph. Society, 36, 74, 83, 116, 180, 221.
  Asiatic Soc. of Bengal, 74.
  British Museum, 172, 183.
  Directors of E. India Co. Mus., 73, 172.
  Edinburgh Geological Soc., 179.
  Geological Soc. of London, 1, 73, 172.
  Imperial Soc. of Naturalists of Moscow, 35, 116, 209.
  Linnean Soc. of London, 6, 83.
  Lyceum of Nat. Hist. of New York, 84, 179, 221.
  Regents of Univ. of the State of New York, 119.
  Royal Acad. of Sciences of Brussels, 194.
  Royal Bavarian Academy of Sciences, 149, 224.
  Royal Society of London, 248.
  Royal Society of Copenhagen, 74.
  Smithsonian Institution, 116, 246.
  Society for developing the mineral resources of the United States, 65.
  Western Acad. of Nat. Sciences, 245.
Lewis, Dr. E. J., don. to mus., 69, 241.
Librarian's Report for 1848, 130; for 1849, 252.
Linnean Assoc. of Penn. College, don. of Journal of, 31, 32, 52, 54, 70, 72, 81, 82, 110, 112, 140.
Linnean Society of London, don. of Transac. of, 32: of Proceedings, 111.
Longchamps, Ed. de Selys, don. to lib., 269.
Lyceum of Nat. Hist. of New York, don. of annals of, 111.

Marcou, M. Jules, don. to lib., 177.
Markoe, Francis, Jr., don. to mus., 79.
Mantell, G. A., don. to lib., 161, 266.
McAndrew, Mr., don. to mus., 163.
McCall, Major Geo. A., Notes on some Mexican Birds heretofore not fully described, 63.
McFarland, Rev. W., don. to mus, 176.
McMinn, J. M., don. to mus., 261; letter from on the 'snow flea,' 246.
McMurtrie, Dr. H., don. to mus., 137.
Medical Examiner, don. of by editors, 265.
Meigs, Dr. Charles D., don. to mus., 29, 188; on the mode of copulation of the Opossum, 58; letter on the effects of deep-sea pressure on the uterus of the Cetacea, 193.
Members elected:
  Barton, Thomas Pennant, 171.

Belknap, Henry, 179.
Biddle, Alexander, 78.
Cook, John, 3.
Cope, Caleb, 3.
Dillingham, Wm. H., 3.
Foulke, Wm. P., 247.
Goddard, Rev. Kingston, 3.
Grant, Dr. Wm. R., 260.
Haines, Robert, 3.
Horner, Prof. Wm. E., 162.
Henry, Dr. Bernard, 179.
Lea, Henry C., 28.
Lejée, Wm. R., 28.
Lewis, Dr. Francis W., 239.
Meigs, Prof. Charles D., 51.
Norris, Octavius A., 239.
Roberts, Edward, 64.
Smith, John Jay, 28.
Smith, Dr. Francis G., 162.
Whitman, Wm. E., 28.
Wilson, Wm. S., 68.
Wolgemuth, F. F., 28.
Michael, Capt. W., don. to mus., 175.
Michel, Dr. Mydleton, on the generation of the Opossum, 46.
Moricand, M., don. to mus., 164.
Morris, Miss E. C., don. to mus., 175; don. to lib., 177.
Morris, Miss M. H., on Cecidomyia culmicola, 194.
Morton, Dr. S. G., don. to and dep. in mus., 29, 51, 52, 69, 80, 137, 187, 241, 261; don. to lib., 32, 52, 72, 143, 164, 188, 189, 190, 265; observations on a Bushman Hottentot boy brought to Philada., 5; remarks on some ancient Peruvian crania from Pisco, 39; on some crania of Shoshonee Indians, 75; on an antique silver image from Peru, 115; observations on the size of the brain in various races and families of man, 221; on a specimen of "bloody bread," 246.
Morton, Wm. T. G., don. to lib., 176.
Moss, Theodore F., don. to mus., 138, 175, 188, 241.

Neill, Dr. John, don. to mus., 241.
Newbold, Wm. L., don. to mus., 175; remarks on some peculiarities in the African cranium, 221.
Nott, Dr. Josiah C., don. to lib., 205.
Nuttall, Thomas, don. to lib., 82; descriptions of plants from the Rocky Mountains and California, collected by W. Gambel, 7.

Officers for 1848, 136; for 1849, 260.

Palmer, A. A., don. to lib., 111.
Pease, Wm. S., observations on the geology and natural history of Mexico, 91.
Peirce, Jacob, remarks on a hybrid between the Guinea fowl and Peacock, 35.
Percival, Thomas C., don. to mus., 137; don. to lib., 70, 81.
Percival, Miss M., don. to lib., 244.
Piddington, Henry, don. to lib., 244.
Pitcher, R., U. S. N., don. to mus., 241.
Pickering, Dr. Charles, on the faculty of vision in the Balani, 2; remarks in relation to estimates of the length of the year, 58.
Powel, Samuel, don. to mus., 138, 187, 205, 241.
Publication Committee of Acad. Nat. Sci., don. to lib., 82, 205; announcement by, of publication of part 2, new series of journal, 75; do. of part 3, 193.
Pulte, Dr. J. H., don. to lib., 52.
Prince de Wied, don to lib., 205.
Professeurs du Jardin des Plantes, don. to mus., 109.

Ravenel, Dr. E., don. to lib., 188.
Read, James, don. mus., 187; don. to lib., 71.
Recording Secretary, report of, for 1848 and 1849, 251.
Redfield, Wm. C., don. to mus., 109.
Redfield, John H., don. to lib., 111.
Regents of University of State of New York, 82, 138, 166, 189.
Reid, Mr., don. to mus., 137.
Report of committee on Mr. Conrad's additional descriptions of tertiary fossils of the United States, 64; on Dr. Gibbes' monograph of the fossil squalidæ of the United States, 65; appointed to prepare a corrected list of members and correspondents, 116; on Prof. Johnson's letter proposing to memorialize Congress on the importance of adding a naturalist to the astronomical expedition to Chili, 116; on Mr. Cassin's catalogue of the vulturidæ and strigidæ in the collection of the Academy, 150; on Dr. Morton's additional observations on a new species of hippopotamus, 162; on Dr. Gambel's remarks on the birds of California, and also on his notes on the Columbidæ in the collection of the Academy, 171; on Dr. Meigs' observations on the reproductive organs, and on the fœtus of the Delphinus Nesarnak, 174, on Prof. Haldeman's descriptions of new cryptocephalinæ, 179; of the committee appointed to

superintend the printing of a new edition of the by-laws, 179; on Prof. Baird's revision of the North American tailed-batrachia, 209; of the committee on proceedings in reference to the sale of Say's American conchology, 209; of the committee appointed to enquire into the expediency of altering the room adjoining the library, so as to adapt it to the purposes of the latter, 246; on Dr. Gibbes' descriptions of new species of Myliobates from the Eocene of S. Carolina, 247; on Dr. Leidy's descriptions of two species of Distoma, 248; on Dr. Le Conte's memoir on the Longicorn Coleoptera of the United States, 249.
Report on the Ornithological collection of the Academy by Mr. Cassin, 256.
Retzius, Prof., don. to lib., 189, 265, 269.
Resignation of Corresponding and Recording Secretaries, 73.
Resolutions: to present the thanks of the Academy to M. Bovy for a medallion of Cuvier, 2; to inform M. Vattemare that the Academy was prepared to exchange with the European Museums, 2; to request of Dr. Shelly further information respecting the locality for certain fossils in Berks Co., Pa., 6; to present a copy of the proceedings to Dr. Savage, 36; to present part 1, new series of Journal to M. Fischer de Waldheim, 36; presenting the thanks of the Society to Prof. W. R. Johnson for his services as Corresponding Secretary, 73; presenting the thanks of the Society to Mr. J. Lambert for his services as Recording Secretary, 74; presenting the thanks of the Society to the Court of Directors of the East India Co.'s Museum for a collection of casts of Sivalik fossils, 76; presenting the thanks of the Society to Dr. Thomas Horsfield for a cast of the cranium of Sivatherium giganteum, 76; instructing Secretary to invite the members of the American Association for the advancement of Science to visit the Academy while in Philadelphia, 83; to present to Dr. Wm. Blanding parts 1 and 2, new series of the Journal, 120; appointing a committee to superintend the printing of a new edition of the by-laws, 171; to loan from the cabinet to Agassiz the cranium of a Manatus, 171; to present to the Prince de Wied part 2, vol. 8, first series, and parts 1, 2 and 3, new series of the Journal, 194; to appoint a committee respecting proposed alterations in the room adjoining the library, to adapt it to the purposes of the same, 245; to present to the Western Academy of Natural Sciences portions of the Proceedings, 245.
Rogers, Prof. H. D., remarks on the formation of mountain ridges, 145.
Royal Academy of Sciences of Belgium, don. to lib., 208.
Royal Bavarian Academy of Sciences, don. to lib., 166, 243.
Ruschenberger, Dr. W. S., don. to mus., 176.

Sanborn, D. M., don. to mus., 109.
Savage, Rev. T. S., don. to mus., 29; letter to Dr. Hallowell in relation to the habits of some African animals, 36; on the Driver ants of Western Africa, 195; on the species of Termitidæ of West Africa, 211.
Say, Mrs. Lucy W., don. to lib., 164, 165, 166, 177, 178, 189.
Sergeant, John, Jr., don. to lib., 190.
Sergeant, J. D., don. to mus., 188.
Silliman, B. Jr. don. to lib., 265.
Silliman's Journal, don. of by editors, 31, 54, 71, 81, 110, 138, 164, 177 189, 191, 243, 265.
Skelton, Dr., don. to mus., 69.
Skerret, Dr., don. to lib., 52.
Smith, Mrs. J. B., don. to mus., 69.
Smithsonian Institution, don. to lib., 205.
Spooner, Mrs. J. E. don. to mus., 137.
Squier, E. G., don. to lib., 165.
State of South Carolina, don. to lib., 166.
Stoever, M. L., don. to lib., 143.
Stott, Mrs. Eliz. extracts from will of, 74; don. to lib. by Executors of, 81.
Sturm, Jacob, don. to lib., 72.
Sturm, F. & J. W., don. to lib., 265.
Sullivant, Wm. S., don. to lib., 71.

Taylor, R. C., don. to mus., 261; don. to lib., 111.
Taylor, J. H., don. to mus., 69.
Taylor, James, don. to mus., 51.
Thompson, Wm., don. to mus., 187, don. to lib., 190, 191.
Townsend, J. K., don. to mus., 51.
Troost, Dr. Gerard, don. to lib., 176.

U. S. Treasury Department, don. to lib., 81.

Van Amringe, Wm. F., don. to lib., 72.
Vargas, Dr., don. to mus., 69.

Vattemare, Alexander, don. to lib., 31.
Vaux, Wm. S., don. to mus., 109, 176, 261.
Verneuil, M. de, don. to lib., 31.
Verreaux, M. Ed., don. to mus., 163, 187.

Walker, Peter, don. to mus., 205.
Warren, Dr. J. C., don. to mus., 175.
Watson, John, don. to mus., 165, 271.
Watson, Dr. Gavin, don. to mus., 29, 30, 51, 69, 79, 176, 187, 241, 261.
Weissmuller, Mr., don. to mus., 163.
Western Academy of Natural Sciences, don. to lib., 166.
Wilson, Dr. T. B., don. to mus., 29, 51, 69, 79, 109, 110, 137, 138, 163, 175, 176, 187, 241, 261; dep. in mus., 29, 52, 138, 175; don. to lib., 263, 264, 265, 266, 267, 268, 269, 270.; dep. in lib., 30, 31, 32, 33, 52, 54, 55, 56, 70, 71, 72, 81, 82, 110, 111, 112, 138, 140, 141, 142, 143, 164, 165, 166, 167, 176, 177, 178, 188, 189, 190, 191, 205, 206, 207, 208, 242, 243.
Wilson, E. T. and C. W., don. to mus., 241.
Wilson, Edward, don. to mus., 163; don. to lib., 110, 267.
Wistar, Dr., don. to mus., 241.
Wislezenus, Dr. A., don. to lib., 70.
Wood, William S., don. to mus., 29, 138.
Woodhouse, D. Samuel W., don. to mus., 69; 138.
Wyman, Dr. Jeffries, don. to lib., 54, 188.

Yandell, Dr. L. P., don. to lib., 70.
Young, Aaron, Jr., don. to lib., 31.

Zoological Society of London, don. of Transactions and Proceedings of, 32.

PROCEEDINGS

OF THE

ACADEMY OF NATURAL SCIENCES

OF PHILADELPHIA.

January 11*th*, 1848.

Vice President **Morton** in the Chair.

A letter was read from Dr. S. P. Hildreth, of Marietta, Ohio, dated December 24th, 1847, relating to a peculiar variety of the Glow-worm.

A letter from Dr. Joel Y. Shelley, dated Hereford, Berks county, Pennsylvania, in reference to some valuable fossil remains from that vicinity, was read and referred to the Geological and Mineralogical Committee.

A communication was read from the Secretary of the Geological Society of London, dated Somerset House, 4th of November, 1847, acknowledging the receipt of recent numbers of the Proceedings.

Dr. Morton read a letter addressed to him by Dr. R. W. Gibbes, dated Columbia, S. C., December 25th, 1847, in relation to the *Basilosaurus*, and announcing a new fossil genus *Saurocetus*.

A letter was read from Dr. William M. Carpenter, of New Orleans, dated December 11th, 1847, enclosing a communication addressed to the Academy, by Dr. E. Pilate, of Opelousas, S. C., dated October 29th, 1847, and proposing exchanges of books or objects of Natural History. Referred to the Curators.

Dr, Leidy remarked, that the existence of the eye in the perfect condition of the Cirrhopoda, has been denied by all anatomists up to the present time, but its presence in the larva or imperfect stages is very generally acknowledged. Several years since, having received some living specimens of *Balanus rugosus* adhering to an oyster, he submitted them to dissection, in the course of which he noticed upon the dark purple membrane which lines the shell and muscular columns running to the opercula, on each side of the anterior middle line, a small, round black body, surrounded by a colorless ring or space of the membrane, which, upon submitting to a low power of the microscope, he found to be an eye, composed of a vitreous body, having nearly two-thirds of its posterior part covered by pigmentum nigrum, and attached to a nervous filament, which he afterwards traced to the supra-œsophageal ganglia. The presence of this organ in other species or genera he had not yet had an opportunity of determining. (See Plate, Fig. 4.)

Dr. Pickering mentioned in confirmation of the Balani possessing the faculty of vision, that in their native situations, he had frequently observed them suddenly retract their cirrhi, and close the opercula, when the hand was passed over and above them.

January 18*th*, 1848.

Vice President Morton in the Chair.

Mr. Peter A. Browne read a paper, entitled "Reasons for believing that animal torpidity is influenced by the annihilation, or interruption, of electrical currents;" which was referred to Dr. Bridges, Professor Johnson, and Dr. Pickering.

A letter was read from Henry Denny, Esq., dated Philosophical Hall, Leeds, December 7th, 1847, addressed to the Secretary of the Academy, presenting several numbers of the Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire.

On motion of Mr. Townsend, the Corresponding Secretary was directed to present the thanks of the Society to Mons. A. Bovy, the artist of a beautiful medallion of Baron Cuvier, presented by him this evening through Mr. A. Vattemare.

On motion of Dr. Leidy, the Corresponding Secretary was instructed to inform Mr. Vattemare, that the Academy was prepared to commence a system of exchanges of objects of Natural History, with the Museums of Europe, as soon as lists of the especial wants of the latter were made out and furnished to the Society.

January 25*th*, 1848.

Vice-President MORTON in the Chair.

On motion of Professor Johnson, it was *Resolved*, That a new and revised edition of the "Notice of the Academy," be prepared under the superintendence of the author, in such manner as to give a condensed view of the present state, as well as past history of the Institution, and that five hundred copies be printed for the use of the Academy.

On motion of Dr. Bridges, *Resolved*, That Peter A. Browne, Esq., be requested to present to the Library of the Academy, a copy of his paper, entitled "Reasons for believing that animal torpidity is influenced by the interruption or annihilation of electrical currents."

The following Committees were elected for the ensuing twelve months:

Geological and Mineralogical.

J. Price Wetherill,
Samuel George Morton,
Thomas R. Wilson,
T. A. Conrad,
William S. Vaux,
Samuel Ashmead,
John Lambert.

Zoological.

Robert E. Griffith,
S. S. Haldeman,
Edward Hallowell,
John Cassin,
Edward Harris,
William Gambel,
Joseph Leidy.

Botanical.

Robert Bridges,
William S. Zantzinger,
R. E. Griffith,
Gavin Watson,
Robert Kilvington.

Physics.

Walter R. Johnson,
Paul B. Goddard,
John S. Phillips,
Thomas C. Percival,
Samuel Powel.

Library.

R. Bridges,
S. B. Ashmead,
T. C. Percival,
Benjamin J. Kern,
M. Carey Lea.

Committee on Proceedings.

S. G. Morton,
J. S. Phillips,
W. S. Zantzinger,
Corresponding and Recording Secretaries, ex-officio.

Caleb Cope, Esq., William H. Dillingham, Esq., John Cooke, Esq., and the Rev. Kingston Goddard, of Philadelphia, and Robert B. Haines, Esq., of Germantown, were elected *Members*, and Dr. William Maxwell Wood, U. S. N., was elected a *Correspondent*.

February 1st, 1848.

Vice President Morton in the Chair.

A communication was presented, entitled, "Descriptions of some new plants collected by Mr. William Gambel in the Rocky Mountains, and California, by Thomas Nuttall, F. L. S." Referred to Dr. Bridges, Mr. Gambel, and Dr. Zantzinger.

Dr. Leidy read a paper "On some peculiar bodies in the Boa constrictor, resembling the Pacinian corpuscles," which was referred to a committee, consisting of Drs. Hallowell, Morton, and Bridges.

Mr. Cassin, referring the Academy to a paper by Professor Percy, "On the management of Monkeys in captivity," published in the Proceedings of the Zoological Society of London, for 1844, made some remarks on that subject.

He characterized Prof. Percy's observations as highly judicious and evidently the result of much experience,—he (Mr. C.) wished however to point out the fact, that in the enumeration of articles suitable for the diet of those animals in confinement, Prof. P. had mentioned no animal food, except milk, an omission difficult to account for, as Prof. P. observes in the same paper, "the Marmozet eats spiders with great avidity."

Mr. C. stated that it was a well known fact, that many of the American species fed not upon fruit solely, but also upon insects, bird's eggs, and even birds, and he had also ascertained that several African species not only devoured insects with eagerness, but also caught them with great dexterity. A specimen of the *Cercopithecus* sabaeus observed by him, was very fond of the common cockroach, and upon being furnished with a daily supply of this insect, actually recovered perfect health after symptoms of disease had made their appearance. This individual caught cockroaches with surprising alertness, and when one escaped, he would watch for it to reappear with the patience and guile of a cat.

Mr. C. stated as his opinion that all the African monkeys (and perhaps all others) were insect eaters, and to a person aware of the large number and enormous size of many of the species of *Coleoptera* of Africa, it would appear a reasonable supposition that those insects were eaten by monkeys.

All monkeys in confinement should be furnished with animal food, either insects, or raw mutton, or beef, cut into thin strips resembling worms, which he had found to be the best substitute.

Mr. C. stated that much of the disease of those animals in captivity, was doubtless to be attributed to the fact, that they were invariably, as far as he had observed, restricted to vegetable food.

February 8th, 1848.

Vice President MORTON in the Chair.

The Chairman read a letter addressed to him by Dr. R. W. Gibbes, dated Columbia, S. C., January 27th, 1848, enclosing another from Prof. Agassiz, addressed to Dr. Gibbes, dated Charleston, December 23d, 1847, and coinciding with him in the opinion that the *Basilosaurus*, of Harlan, or *Zeuglodon cetoides* of Owen, is generically distinct from the species described by Dr. Gibbes under the generic name of *Dorudon*, and published in these Proceedings. The following is a portion of the letter of Professor Agassiz:—

"I have examined the interesting fossil remains of Cetacea which you left with me yesterday. On one comparison, I have satisfied myself that Basilosaurus or *Zeuglodon cetoides*, is generically distinct from your second species, which you first described under the generic name of Dorudon. The hollowness of the teeth cannot be indicative of a mere young age of that animal, as the form of the lower jaw is altogether different in the two animals: Zeuglodon having a continuous fissure connecting the alveoli, and another groove along the edge of the jaw-bone, which are wanting in Dorudon. Besides, the posterior branch of the jaw is also different, the two lamellæ of the bone rising to the same height, and much higher in Zeuglodon, than in Dorudon, which has a deep depression upon its external surface, owing to the difference in the height of the two laminæ. Again, Zeuglodon has deep pits upon the external surface of the lower jaw, showing that the teeth of the upper jaw left an impression upon the lower, resting upon it, as in the crocodiles, of our days, when the mouth is shut. The other portions of the jaws of Dorudon are from the upper jaw, the one with one tooth being from the left side, the other with three teeth being from the right side. I am therefore sorry that you have withdrawn your genus, in deference to the suggestion of Prof. Owen, as he did not insist upon their generic identity, but rather alluded to the close affinity of these remains.

The isolated tooth, though imperfect, is highly interesting, as indicating a new genus of Sauroid Cetacea, allied to Megalosaurus by the form of the tooth, but differing by the form of its root. I would propose to call it *Sauro-cetus Gibbesii*. It will easily be distinguished from the fang of Dorudon, by its great flatness and acute serrated edge. In the form of these anterior teeth there is another generic difference between Zeuglodon and Dorudon, worth mentioning; in the former being blunt and short, whilst Dorudon has them acute and sharp upon the edges.

I thank you for the opportunity you have afforded me to examine these highly interesting remains. As soon as I reach Boston, I shall avail myself of the opportunity of Dr. Warren's collection, to ascertain whether the Zeuglodon of South Carolina is specifically identical with the large species of Alabama, which I begin to doubt."

A letter was read from the Rev. Thomas S. Savage, addressed to Dr. Hallowell, dated Natchez, Miss., January 15th, 1848, stating that he had drawn up some facts connected with the habits of three of the specimens of Natural History from Africa, lately presented by him to the Society, and had forwarded them with sketches of two of the serpents in a recent state, with some account of them as connected with the superstition of the natives of that part of Africa.

A letter from William Thompson, Esq., addressed to Dr. Griffith, dated Donegal Square, Belfast, January 11th, 1848, was read, acknowledging the receipt of a donation of shells from Dr. Griffith and the Academy, and returning his thanks therefor; also stating that he was preparing to forward in return, a number of species of *Echinodermata* and *Mollusca*, and of *Algæ*, about one hundred and fifty species; and also offering to transmit, if desired, specimens of Irish *Crustacea* and *Zoophytes*, also *Cirrhipoda*, *Annelidæ*, and *Amorphozoa*, and fossils from the green sand formation of his vicinity.

A letter was read from Dr. Charles T. Jackson, addressed to the Academy, dated Boston, January 20th, 1848, relating to the proposed erection in Paris of a monument to M. Etienne Geoffroy St. Hilaire, and enclosing a printed circular on the subject, dated Paris, April 30th, 1847, signed by Dumeril, Arago, Dumas, Serres, L. Elie de Beaumont, Jomard, Regnault, and Roche, and soliciting the co-operation of scientific societies and individuals in this country.

Professor Haldeman made some remarks on the fibrous lava of the Hawaian Islands, and referred to the formation of a similar material in anthracite blast-furnaces. When the hearth of the furnace is some what chilled, and the slag is not highly fluid, if the blast is allowed to escape over it, it will be drawn out into long threads, which form bunches resembling flax. According to Mr. Dana, the fibrous lava (which Prof. H. proposes to call *Stypnite,*) is formed from masses of fluid lava cast into the air and struck by the wind.

Dr. Morton offered some observations of the Bushman Hottentot boy, now in this city, and who was brought here under the kind and paternal auspices of Capt. Chase, United States Consul at the Cape of Good Hope. This gentleman has expressed his intention to be present, with the boy, at a future meeting of the Academy; and in view of this arrangement, Dr. M. stated that he should confine his remarks to a few very interesting points. The boy is supposed to be about eighteen years of age, is three feet eleven inches in height, and of slender make. His complexion is that of a *dried leaf*, as described by travellers among these people; the head is elongated, flattened on the coronal region; full behind, and rather broad between the parietal bones. The face does not project, the nose is so flat as scarcely to be seen in profile; the cheek-bones wide, and the forehead low but not receding. The hair is arranged in delicate tufts, of a straight and cylindrical form, each tuft being inserted separately into the scalp, so that the intervening light skin presents a strong contrast with the black hair. If these tufts are examined, the hairs composing them are found to be spiral, and so intimately blended as to give the whole fasciculus a compact appearance, and an extraordinary flexibility. The hairs are very fine, but Dr. M. observed that his friend Dr. Meigs had called his attention to the remarkable fact, that they are flattened, like tape, and as seen under a power of forty or fifty diameters of Chevallier's microscope, each hair has the precise appearance of an ordinary steel watch-spring. Dr. M. had repeated the experiments of Dr. Meigs, with that gentleman's assistance, using one of Oberhauser's microscopes, with the same result. Dr. M. also adverted to a prominence at or near the top of the sacrum, which, so far as he could judge from a very imperfect examination of it, as covered with the boy's usual dress, seems to be a prolongation of the spinous and transverse processes over the region in question; and which would appear to be the osseous frame-work of that fatty cushion which is of proverbial occurrence in the Hottentot women. Dr. M. expresed a hope that he might yet be able to examine this structure more carefully, and report the facts to the Society. The boy's head corresponds, in most of its developments, to those of two Hottentot skulls in Dr. M.'s collection, sent him by Mr. John Watson of Cape Town. The mental and moral questions connected with the history of this youth, possess an extreme interest, but can only be correctly judged of after more extended inquiries.

Mr. Ashmead made some remarks on what he considered a peculiarity in the calcareous spar, from the Rossie Lead mines in New York.

The general form presented by fractured crystals of calcareous spar is rhomboedrous. Cleavage is perfect parellel to the primary planes of a rhomb, and is therefore three-fold.

Some time since, while engaged in reducing to convenient size for the cabinet, some specimens of double refracting spar from the above locality, he observed that some of the fractured crystals were susceptible of mechanical division in different directions from those of the planes of a rhomboedron; this induced him to slice off the laminæ wherever he found cleavage was perfect, and by proceeding with this sort of dissection, the result was a nucleus, of perfectly geometrical form. It is a solid, bounded by six isosceles triangular planes, of similar lustre, or two obtuse three-sided pyramids, placed base to base; it has but one axis passing through opposite solid angles; assuming the axis to be vertical, the base is an equilateral triangle. As the faces are not parellel, but inclined to each other, it is susceptible of perfect cleavage in six directions.

The solid angle of the apex is similar to the obtuse solid angle of the rhomb, therefore, by truncating the alternate solid angles of the rhomb, this solid is produced.

On motion of Dr. Leidy, the Corresponding Secretary was requested to make some further inquiry of Dr. Joel Y. Shelley, of Berks county, respecting the locality of certain fossils from his vicinity, and the depth at which they were found by him.

February 15th, 1848.

Vice President Morton in the Chair.

A letter was read from Dr. William Maxwell Wood, U. S. N., dated Philadelphia, February 11th, 1848, acknowledging the receipt of his notice of election as a Correspondent.

A letter was read from the Secretary of the Linnean Society of London, dated Soho Square, December 30th, 1847, acknowledging the receipt of recent numbers of the Proceedings of the Academy.

A supplement to a communication presented at the meeting of February 1st, 1848, entitled "Descriptions of some new plants collected by Mr. William Gambel in the Rocky Mountains and California, by Thomas Nuttall, F. L. S.," was read and referred to the same committee, viz., Dr. Bridges, Mr. Gambel, and Dr. Zantzinger.

Mr. Cassin read a paper, containing "Descriptions of new species of Birds of the genus *Cyanocorax*, Boie, specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia," which was referred to the following Committee, viz., Dr. Wilson, Mr. Gambel, and Mr. Townsend.

Professor Henry D. Rogers exhibited and explained his Geological Map of Pennsylvania, and also a "Section of the Southern Anthracite coal basin at Pottsville."

Dr. Leidy mentioned to the Society, that he had examined the hair of the Hottentot boy, and that his observations corroborated the statement of Dr. Morton, made at last meeting, that it was much compressed or flattened. Transverse sections varied in outline from an oval to a very compressed lenticular form.

February 29th, 1848.

Vice President MORTON in the Chair.

The Committee on Mr. Nuttall's paper, read 1st and 11th insts., reported in favor of publication in the Journal and Proceedings.

Descriptions of Plants collected by Mr. William Gambel in the Rocky Mountains and Upper California. By THOMAS NUTTALL.

*GAMBELIA.[†]

Natural order, SCROPHULARINÆ. Tribe, ANTIRRHINEÆ.

Calyx 5-parted, nearly equal. *Corolla* hypogynous, the tube cylindrical, saccate at the base, orifice narrowly pervious, the border bilabiate, the palate rather prominent, smooth, upper lip erect; the lower spreading, all the segments nearly equal and oblong. *Stamina* four, arising from the base of the corolla tube, included, didynamous; no sterile filament: *anthers* bilocular, oblong. *Ovarium* bilocular, with many ovules, seated upon a glandular torus. *Style* simple clavate, entire. *Capsule* subglobose, 2-celled, opening below the summit by two or three irregular apertures. *Seed*, [not seen.]—A spreading bush, with verticillate, entire, coriaceous leaves, and axillary and terminal conspicuous scarlet flowers. Allied to Galvezia, but with a prominent palate and saccate spur at the base of the corolla.

G. *speciosa.*

HAB. In the island at Santa Catalina on the coast of California. Flowering in the month of February.

*CROSSOSOMA.[‡]

Calyx 5-leaved, imbricated, somewhat coriaceous and persistent, the leaves unequal and concave, with colored margins. *Corolla* of 5 subsessile, oval petals. *Stamina* perigynous, about 25, on a fleshy disk; anthers adnate. *Ovaries* two to five, united at base into a short stripe, 1-celled; ovules many, attached to the ventral suture in a single crowded series. *Stigmas* thick and sessile, recurved. *Capsules* two to five, coriaceous and cylindric, opening longitudinally and inwards, many-seeded. *Seed* roundish-reniform, nearly surrounded by a deeply fringed arillus. Embryo not seen.—A Californian shrub, with alternate, entire, crowded, exstipulate leaves, and 1-flowered, short, terminal branchlets; flowers white.

[†] In honor of Mr. William Gambel, a naturalist, who has explored Upper California, and made an interesting collection of the plants of that country.

[‡] From κροσσος *fringe*, and σωμα *a body*; in allusion to the fimbriate arillus.

C. *Californica.*

Hab. Abundant on the borders of streams in the island of Catalina, off the coast of Upper California. Flowering in February.

* TRIFOLIUM.

§. * **Physantha.** (*Involucrarium.*) With the calyx 5-cleft, one or two of the divisions smaller. *Corolla* marcescent. The vexillum transformed into a physiform sac, which at length envelopes the very small wings and monopetalous carina. *Stigma* capitate. *Legume* stipitate, 2 to 5-seeded, included in the calyx.

T. * *stenophyllum.* Annual, branching from the base; leaves ternate, smooth and linear, distantly serrulate; stipules subulate, sparingly denticulate; peduncles elongated, filiform, heads small and nearly round, the vexillum, at length, forming a membranous inflated sac of equal breadth throughout, embracing the small wings and small carina, which is monopetalous, with but one broad claw attached to the vexillum.

Hab. The island of Catalina, near Santa Pedro, Upper California. Flowering in February.

T. * *Gambelii.* Perennial and decumbent, smooth, branching from the base; leaflets roundish-oval or cuneate-oval, obtuse, very minutely and sharply serrulate; stipules membranaceous, dilated, entire, with subulate, slender points; peduncles about the length of the leaves; involucrum about 8-cleft, the segments lanceolate, acuminate; teeth of the calyx trifid, or simple, with setaceous points; legume stipitate, 3 to 5-seeded; wings longer than the vexillum.

Hab. Island of Catalina, St. Simeon and Pueblo de los Angeles.

A large, robust species, with shortish branches, very large stipules, and heads of large flowers, which appear to have been whitish, with purple tips to the carina; heads of flowers 1 to 1¼ inches across; the vexillum very wide below, so as to conceal the other petals; the wings and carina are also united; leaflets three-quarters of an inch long, and about the same breadth.

T. * *ciliatum.* ⊙. Smooth and erect, but little branched; lower leaves on very long petioles; leaflets cuneate-elliptic or oblong, obtuse, minutely and sharply serrulate; bractes adnate, subciliate, herbaceous, entire and acutely acuminate; capituli axillar and terminal, rounded, many-flowered, destitute of involucrum, but subtended by a cicatrised circle of points; the flowers attached to a cylindric torus, often ending in a long subulate point beyond the capitulum; segments of the calyx unequal, one of the teeth small, the rest lanceolate, sharply acuminated and bristly ciliated with stiff hairs; vexillum enclosing the other petals, which are small; legume flat, stipitate, about 1-seeded.

Hab. Pueblo de los Angeles, Upper California.

Stipules herbaceous; the leaves rather thick and strongly veined, with forked vessels; calyx nearly the length of the ochroleucous flower. This is again a **Physantha**, but with a proper involucrum.

T. *_denudatum_. ⊙. Smooth, stem erect, a little branched, lower leaves on very long petioles; leaflets obcordate or oboval, minutely and sharply serrulate; stipules membranaceous, entire and setaceously acuminated; capituli axillar and terminal, rounded, many-flowered, without an involucrum, but with a cicatrised circle in its place, the flowers attached to a conic torus of the same structure: segments of the calyx subequal, linear-lanceolate, sharply acuminated, nearly the length of the small ochroleucous flower; pod stipitate, about 2-seeded.

Hab. With the above, which it much resembles, but the vexillum is not unusually inflated.

About a span high; a rather small annual, and very smooth in every part. Leaflets about three-quarters of an inch long, three to four lines wide. Flowers small, with the teeth of the calyx very long and conspicuous.

T. *_diversifolium_. ⊙. Small and smooth, branching from the base; leaflets linear or oblong, obtuse, perfectly entire, or repandly and rather sharply serrulate towards the apex; stipules nearly entire, with subulate points; peduncles longer than the leaves; heads very small, 8 to 10-flowered; involucrum 6 to 8-parted, the divisions entire, ovate, obtuse; calyx nearly half the length of the short flowers, the teeth simple and acute; legume 2-seeded.

Hab. Near St. Simeon, Upper California. Remarkable for the diversity of its foliage, some of the leaflets being linear and quite entire, others with the same slightly serrulate; in other plants they are cuneate-oblong, and even emarginate. The plant about a span high, with reddish flowers and a deep purple tipped carina.

ASTRAGALUS.

§. Microlobium. Annual or perennial? Flowers various. Legume small, scarcely exserted beyond the calyx, 1-seeded.

A. *_Catalinensis_. ⊙. Nearly erect and much branched; stipules ovate, distinct, leaflets linear, deeply emarginate, five to seven pair, as well as the stem, scattered with appressed hairs; flowers ochroleucous, in capitate heads; segments of the calyx subulate, obtuse, thickly clad with rough white and black hairs, the segments all inclined to the lower side; legume scarcely exserted, scabrous.

Hab. On the island of Catalina, in Upper California. Flowering in February.

A. *_nigrescens_. Annual; nearly erect and much branched; stipules ovate, acuminate; leaflets cuneate-linear, deeply emarginate, nearly smooth; flowers ochroleucous, in short oval spikes, at length nodding; segments of the calyx subulate, acute, clothed with shortish black hair; legume ovate, acute, and villous, a little exserted; cells 1-seeded.

Hab. With the above, which it greatly resembles, but different in the calyx and pod; flowers less crowded and pedicellate, the calyx not so deeply divided, nor clothed with such long rough hairs; bractes minute, chaffy, subulate; stipules partly united at the base.

PHLOX.

P. *_bryoides_. Densely cæspitose, very small; leaves closely imbricated in 4 rows, the ciliar pubescence extending beyond the points of the oblong-lanceo-

Vattemare, Alexander, don. to lib., 31.
Vaux, Wm. S., don. to mus., 109, 176, 261.
Verneuil, M. de, don. to lib., 31.
Verreaux, M. Ed., don. to mus., 163, 187.

Walker, Peter, don. to mus., 205.
Warren, Dr. J. C., don. to mus., 175.
Watson, John, don. to mus., 165, 271.
Watson, Dr. Gavin, don. to mus., 29, 30, 51, 69, 79, 176, 187, 241, 261.
Weissmuller, Mr., don. to mus., 163.
Western Academy of Natural Sciences, don. to lib., 166.
Wilson, Dr. T. B., don. to mus., 29, 51, 69, 79, 109, 110, 137, 138, 163, 175, 176, 187, 241, 261; dep. in mus., 29, 52, 138, 175; don. to lib., 263, 264, 265, 266, 267, 268, 269, 270.; dep. in lib., 30, 31, 32, 33, 52, 54, 55, 56, 70, 71, 72, 81, 82, 110, 111, 112, 138, 140, 141, 142, 143, 164, 165, 166, 167, 176, 177, 178, 188, 189, 190, 191, 205, 206, 207, 208, 242, 243.
Wilson, E. T. and C. W., don. to mus., 241.
Wilson, Edward, don. to mus., 163; don. to lib., 110, 267.
Wistar, Dr., don. to mus., 241.
Wislezenus, Dr. A., don. to lib., 70.
Wood, William S., don. to mus., 29, 138.
Woodhouse, D. Samuel W., don. to mus., 69; 138.
Wyman, Dr. Jeffries, don. to lib., 54, 188.

Yandell, Dr. L. P., don. to lib., 70.
Young, Aaron, Jr., don. to lib., 31.

Zoological Society of London, don. of Transactions and Proceedings of, 32.

PROCEEDINGS

OF THE

ACADEMY OF NATURAL SCIENCES

OF PHILADELPHIA.

January 11*th*, 1848.

Vice President **Morton** in the Chair.

A letter was read from Dr. S. P. Hildreth, of Marietta, Ohio, dated December 24th, 1847, relating to a peculiar variety of the Glow-worm.

A letter from Dr. Joel Y. Shelley, dated Hereford, Berks county, Pennsylvania, in reference to some valuable fossil remains from that vicinity, was read and referred to the Geological and Mineralogical Committee.

A communication was read from the Secretary of the Geological Society of London, dated Somerset House, 4th of November, 1847, acknowledging the receipt of recent numbers of the Proceedings.

Dr. Morton read a letter addressed to him by Dr. R. W. Gibbes, dated Columbia, S. C., December 25th, 1847, in relation to the *Basilosaurus*, and announcing a new fossil genus *Saurocetus*.

A letter was read from Dr. William M. Carpenter, of New Orleans, dated December 11th, 1847, enclosing a communication addressed to the Academy, by Dr. E. Pilate, of Opelousas, S. C., dated October 29th, 1847, and proposing exchanges of books or objects of Natural History. Referred to the Curators.

Dr, Leidy remarked, that the existence of the eye in the perfect condition of the Cirrhopoda, has been denied by all anatomists up to the present time, but its presence in the larva or imperfect stages is very generally acknowledged. Several years since, having received some living specimens of *Balanus rugosus* adhering to an oyster, he submitted them to dissection, in the course of which he noticed upon the dark purple membrane which lines the shell and muscular columns running to the opercula, on each side of the anterior middle line, a small, round black body, surrounded by a colorless ring or space of the membrane, which, upon submitting to a low power of the microscope, he found to be an eye, composed of a vitreous body, having nearly two-thirds of its posterior part covered by pigmentum nigrum, and attached to a nervous filament, which he afterwards traced to the supra-œsophageal ganglia. The presence of this organ in other species or genera he had not yet had an opportunity of determining. (See Plate, Fig. 4.)

Dr. Pickering mentioned in confirmation of the Balani possessing the faculty of vision, that in their native situations, he had frequently observed them suddenly retract their cirrhi, and close the opercula, when the hand was passed over and above them.

January 18*th*,1848.

Vice President Morton in the Chair.

Mr. Peter A. Browne read a paper, entitled "Reasons for believing that animal torpidity is influenced by the annihilation, or interruption, of electrical currents;" which was referred to Dr. Bridges, Professor Johnson, and Dr. Pickering.

A letter was read from Henry Denny, Esq., dated Philosophical Hall, Leeds, December 7th, 1847, addressed to the Secretary of the Academy, presenting several numbers of the Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire.

On motion of Mr. Townsend, the Corresponding Secretary was directed to present the thanks of the Society to Mons. A. Bovy, the artist of a beautiful medallion of Baron Cuvier, presented by him this evening through Mr. A. Vattemare.

On motion of Dr. Leidy, the Corresponding Secretary was instructed to inform Mr. Vattemare, that the Academy was prepared to commence a system of exchanges of objects of Natural History, with the Museums of Europe, as soon as lists of the especial wants of the latter were made out and furnished to the Society.

January 25*th*, 1848.

Vice-President MORTON in the Chair.

On motion of Professor Johnson, it was *Resolved*, That a new and revised edition of the "Notice of the Academy," be prepared under the superintendence of the author, in such manner as to give a condensed view of the present state, as well as past history of the Institution, and that five hundred copies be printed for the use of the Academy.

On motion of Dr. Bridges, *Resolved*, That Peter A. Browne, Esq., be requested to present to the Library of the Academy, a copy of his paper, entitled "Reasons for believing that animal torpidity is influenced by the interruption or annihilation of electrical currents."

The following Committees were elected for the ensuing twelve months:

Geological and Mineralogical.

J. Price Wetherill,
Samuel George Morton,
Thomas R. Wilson,
T. A. Conrad,
William S. Vaux,
Samuel Ashmead,
John Lambert.

Zoological.

Robert E. Griffith, John Cassin,
S. S. Haldeman, Edward Harris,
Edward Hallowell, William Gambel,
Joseph Leidy.

Botanical.

Robert Bridges, R. E. Griffith,
William S. Zantzinger, Gavin Watson,
Robert Kilvington.

Physics.

Walter R. Johnson, John S. Phillips,
Paul B. Goddard, Thomas C. Percival,
Samuel Powel.

Library.

R. Bridges, T. C. Percival,
S. B. Ashmead, Benjamin J. Kern,
M. Carey Lea.

Committee on Proceedings.

S. G. Morton,
J. S. Phillips,
W. S. Zantzinger,
Corresponding and Recording Secretaries, ex-officio.

Caleb Cope, Esq., William H. Dillingham, Esq., John Cooke, Esq., and the Rev. Kingston Goddard, of Philadelphia, andRobert B. Haines, Esq., of Germantown, were elected *Members*, and Dr. William Maxwell Wood, U. S. N., was elected a *Correspondent.*

February 1*st*, 1848.

Vice President Morton in the Chair.

A communication was presented, entitled, "Descriptions of some new plants collected by Mr. William Gambel in the Rocky Mountains, and California, by Thomas Nuttall, F. L. S." Referred to Dr. Bridges, Mr. Gambel, and Dr. Zantzinger.

Dr. Leidy read a paper "On some peculiar bodies in the Boa constrictor, resembling the Pacinian corpuscles," which was referred to a committee, consisting of Drs. Hallowell, Morton, and Bridges.

Mr. Cassin, referring the Academy to a paper by Professor Percy, "On the management of Monkeys in captivity," published in the Proceedings of the Zoological Society of London, for 1844, made some remarks on that subject.

He characterized Prof. Percy's observations as highly judicious and evidently the result of much experience,—he (Mr. C.) wished however to point out the fact, that in the enumeration of articles suitable for the diet of those animals in confinement, Prof. P. had mentioned no animal food, except milk, an omission difficult to account for, as Prof. P. observes in the same paper, "the Marmoset eats spiders with great avidity."

Mr. C. stated that it was a well known fact, that many of the American species fed not upon fruit solely, but also upon insects, bird's eggs, and even birds, and he had also ascertained, that several African species not only devoured insects with eagerness, but also caught them with great dexterity. A specimen of the *Cercopithecus sabœus*, observed by him, was very fond of the common cockroach, and upon being furnished with a daily supply of that insect, actually recovered perfect health after symptoms of disease had made their appearance. This individual caught cockroaches with surprising adroitness, and when one escaped, he would watch for it to reappear with the patience and quiet of a cat.

Mr. C. stated as his opinion, that all the African monkeys (and perhaps all others) were insect eaters, and to a person aware of the large number and enormous size of many of the species of Coleoptera of Africa, it wood appear a reasonable supposition that those insects were eaten by monkeys.

All monkeys in confinement should be furnished with animal food, either insects, or raw mutton, or beef, cut into thin strips resembling worms, which he had found to be the best substitute.

Mr. C. stated that much of the disease of those animals in captivity, was doubtless to be attributed to the fact, that they were invariably, as far as he had observed, restricted to vegetable food.

February 8th, 1848.

Vice President MORTON in the Chair.

The Chairman read a letter addressed to him by Dr. R. W. Gibbes, dated Columbia, S. C., January 27th, 1848, enclosing another from Prof. Agassiz, addressed to Dr. Gibbes, dated Charleston, December 23d, 1847, and coinciding with him in the opinion that the *Basilosaurus*, of Harlan, or *Zeuglodon cetoides* of Owen, is generically distinct from the species described by Dr. Gibbes under the generic name of *Dorudon*, and published in these Proceedings. The following is a portion of the letter of Professor Agassiz:—

"I have examined the interesting fossil remains of Cetacea which you left with me yesterday. On one comparison, I have satisfied myself that Basilosaurus or *Zeuglodon cetoides*, is generically distinct from your second species, which you first described under the generic name of Dorudon. The hollowness of the teeth cannot be indicative of a mere young age of that animal, as the form of the lower jaw is altogether different in the two animals: Zeuglodon having a continuous fissure connecting the alveoli, and another groove along the edge of the jaw-bone, which are wanting in Dorudon. Besides, the posterior branch of the jaw is also different, the two lamellæ of the bone rising to the same height, and much higher in Zeuglodon, than in Dorudon, which has a deep depression upon its external surface, owing to the difference in the height of the two laminæ. Again, Zeuglodon has deep pits upon the external surface of the lower jaw, showing that the teeth of the upper jaw left an impression upon the lower, resting upon it, as in the crocodiles, of our days, when the mouth is shut. The other portions of the jaws of Dorudon are from the upper jaw, the one with one tooth being from the left side, the other with three teeth being from the right side. I am therefore sorry that you have withdrawn your genus, in deference to the suggestion of Prof. Owen, as he did not insist upon their generic identity, but rather alluded to the close affinity of these remains.

The isolated tooth, though imperfect, is highly interesting, as indicating a new genus of Sauroid Cetacea, allied to Megalosaurus by the form of the tooth, but differing by the form of its root. I would propose to call it *Sauro-cetus Gibbesii.* It will easily be distinguished from the fang of Dorudon, by its great flatness and acute serrated edge. In the form of these anterior teeth there is another generic difference between Zeuglodon and Dorudon, worth mentioning; in the former being blunt and short, whilst Dorudon has them acute and sharp upon the edges.

I thank you for the opportunity you have afforded me to examine these highly interesting remains. As soon as I reach Boston, I shall avail myself of the opportunity of Dr. Warren's collection, to ascertain whether the Zeuglodon of South Carolina is specifically identical with the large species of Alabama, which I begin to doubt."

A letter was read from the Rev. Thomas S. Savage, addressed to Dr. Hallowell, dated Natchez, Miss., January 15th, 1848, stating that he had drawn up some facts connected with the habits of three of the specimens of Natural History from Africa, lately presented by him to the Society, and had forwarded them with sketches of two of the serpents in a recent state, with some account of them as connected with the superstition of the natives of that part of Africa.

A letter from William Thompson, Esq., addressed to Dr. Griffith, dated Donegal Square, Belfast, January 11th, 1848, was read, acknowledging the receipt of a donation of shells from Dr. Griffith and the Academy, and returning his thanks therefor; also stating that he was preparing to forward in return, a number of species of *Echinodermata* and *Mollusca*, and of *Algæ*, about one hundred and fifty species; and also offering to transmit, if desired, specimens of Irish *Crustacea* and *Zoophytes*, also *Cirrhipoda*, *Annelidæ*, and *Amorphozoa*, and fossils from the green sand formation of his vicinity.

A letter was read from Dr. Charles T. Jackson, addressed to the Academy, dated Boston, January 20th, 1848, relating to the proposed erection in Paris of a monument to M. Etienne Geoffroy St. Hilaire, and enclosing a printed circular on the subject, dated Paris, April 30th, 1847, signed by Dumeril, Arago, Dumas, Serres, L. Elie de Beaumont, Jomard, Regnault, and Roche, and soliciting the co-operation of scientific societies and individuals in this country.

Professor Haldeman made some remarks on the fibrous lava of the Hawaian Islands, and referred to the formation of a similar material in anthracite blast-furnaces. When the hearth of the furnace is some what chilled, and the slag is not highly fluid, if the blast is allowed to escape over it, it will be drawn out into long threads, which form bunches resembling flax. According to Mr. Dana, the fibrous lava (which Prof. H. proposes to call *Stypnite*,) is formed from masses of fluid lava cast into the air and struck by the wind.

Dr. Morton offered some observations of the Bushman Hottentot boy, now in this city, and who was brought here under the kind and paternal auspices of Capt. Chase, United States Consul at the Cape of Good Hope. This gentleman has expressed his intention to be present, with the boy, at a future meeting of the Academy; and in view of this arrangement, Dr. M. stated that he should confine his remarks to a few very interesting points. The boy is supposed to be about eighteen years of age, is three feet eleven inches in height, and of slender make. His complexion is that of a *dried leaf*, as described by travellers among these people; the head is elongated, flattened on the coronal region; full behind, and rather broad between the parietal bones. The face does not project, the nose is so flat as scarcely to be seen in profile; the cheek-bones wide, and the forehead low but not receding. The hair is arranged in delicate tufts, of a straight and cylindrical form, each tuft being inserted separately into the scalp, so that the intervening light skin presents a strong contrast with the black hair. If these tufts are examined, the hairs composing them are found to be spiral, and so intimately blended as to give the whole fasciculus a compact appearance, and an extraordinary flexibility. The hairs are very fine, but Dr. M. observed that his friend Dr. Meigs had called his attention to the remarkable fact, that they are flattened, like tape, and as seen under a power of forty or fifty diameters of Chevallier's microscope, each hair has the precise appearance of an ordinary steel watch-spring. Dr. M. had repeated the experiments of Dr. Meigs, with that gentleman's assistance, using one of Oberhauser's microscopes, with the same result. Dr. M. also adverted to a prominence at or near the top of the sacrum, which, so far as he could judge from a very imperfect examination of it, as covered with the boy's usual dress, seems to be a prolongation of the spinous and transverse processes over the region in question; and which would appear to be the osseous frame-work of that fatty cushion which is of proverbial occurrence in the Hottentot women. Dr. M. expresed a hope that he might yet be able to examine this structure more carefully, and report the facts to the Society. The boy's head corresponds, in most of its developments, to those of two Hottentot skulls in Dr. M.'s collection, sent him by Mr. John Watson of Cape Town. The mental and moral questions connected with the history of this youth, possess an extreme interest, but can only be correctly judged of after more extended inquiries.

Mr. Ashmead made some remarks on what he considered a peculiarity in the calcareous spar, from the Rossie Lead mines in New York.

The general form presented by fractured crystals of calcareous spar is rhomboedrous. Cleavage is perfect parellel to the primary planes of a rhomb, and is therefore three-fold.

Some time since, while engaged in reducing to convenient size for the cabinet, some specimens of double refracting spar from the above locality, he observed that some of the fractured crystals were susceptible of mechanical division in different directions from those of the planes of a rhomboedron; this induced him to slice off the laminæ wherever he found cleavage was perfect, and by proceeding with this sort of dissection, the result was a nucleus, of perfectly geometrical form. It is a solid, bounded by six isosceles triangular planes, of similar lustre, or two obtuse three-sided pyramids, placed base to base; it has but one axis passing through opposite solid angles; assuming the axis to be vertical, the base is an equilateral triangle. As the faces are not parellel, but inclined to each other, it is susceptible of perfect cleavage in six directions.

The solid angle of the apex is similar to the obtuse solid angle of the rhomb, therefore, by truncating the alternate solid angles of the rhomb, this solid is produced.

On motion of Dr. Leidy, the Corresponding Secretary was requested to make some further inquiry of Dr. Joel Y. Shelley, of Berks county, respecting the locality of certain fossils from his vicinity, and the depth at which they were found by him.

February 15*th*, 1848.

Vice President Morton in the Chair.

A letter was read from Dr. William Maxwell Wood, U. S. N., dated Philadelphia, February 11th, 1848, acknowledging the receipt of his notice of election as a Correspondent.

A letter was read from the Secretary of the Linnean Society of London, dated Soho Square, December 30th, 1847, acknowledging the receipt of recent numbers of the Proceedings of the Academy.

A supplement to a communication presented at the meeting of February 1st, 1848, entitled "Descriptions of some new plants collected by Mr. William Gambel in the Rocky Mountains and California, by Thomas Nuttall, F. L. S.," was read and referred to the same committee, viz., Dr. Bridges, Mr. Gambel, and Dr. Zantzinger.

Mr. Cassin read a paper, containing "Descriptions of new species of Birds of the genus *Cyanocorax*, Boie, specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia," which was referred to the following Committee, viz., Dr. Wilson, Mr. Gambel, and Mr. Townsend.

Professor Henry D. Rogers exhibited and explained his Geological Map of Pennsylvania, and also a "Section of the Southern Anthracite coal basin at Pottsville."

Dr. Leidy mentioned to the Society, that he had examined the hair of the Hottentot boy, and that his observations corroborated the statement of Dr. Morton, made at last meeting, that it was much compressed or flattened. Transverse sections varied in outline from an oval to a very compressed lenticular form.

February 29*th*, 1848.

Vice President Morton in the Chair.

The Committee on Mr. Nuttall's paper, read 1st and 11th insts., reported in favor of publication in the Journal and Proceedings.

Descriptions of Plants collected by Mr. William Gambel in the Rocky Mountains and Upper California. By Thomas Nuttall.

* GAMBELIA. [†]

Natural order, Scrophularinæ. Tribe, Antirrhineæ.

Calyx 5-parted, nearly equal. *Corolla* hypogynous, the tube cylindrical, saccate at the base, orifice narrowly pervious, the border bilabiate, the palate rather prominent, smooth, upper lip erect; the lower spreading, all the segments nearly equal and oblong. *Stamina* four, arising from the base of the corolla tube, included, didynamous; no sterile filament: *anthers* bilocular, oblong. *Ovarium* bilocular, with many ovules, seated upon a glandular torus. *Style* simple clavate, entire. *Capsule* subglobose, 2-celled, opening below the summit by two or three irregular apertures. *Seed*, [not seen.]—A spreading bush, with verticillate, entire, coriaceous leaves, and axillary and terminal conspicuous scarlet flowers. Allied to Galvezia, but with a prominent palate and saccate spur at the base of the corolla.

G. *speciosa.*

Hab. In the island at Santa Catalina on the coast of California. Flowering in the month of February.

* CROSSOSOMA. [‡]

Calyx 5-leaved, imbricated, somewhat coriaceous and persistent, the leaves unequal and concave, with colored margins. *Corolla* of 5 subsessile, oval petals. *Stamina* perigynous, about 25, on a fleshy disk; anthers adnate. *Ovaries* two to five, united at base into a short stripe, 1-celled; ovules many, attached to the ventral suture in a single crowded series. *Stigmas* thick and sessile, recurved. *Capsules* two to five, coriaceous and cylindric, opening longitudinally and inwards, many-seeded. *Seed* roundish-reniform, nearly surrounded by a deeply fringed arillus. Embryo not seen.—A Californian shrub, with alternate, entire, crowded, exstipulate leaves, and 1-flowered, short, terminal branchlets; flowers white.

[†] In honor of Mr. William Gambel, a naturalist, who has explored Upper California, and made an interesting collection of the plants of that country.

[‡] From *κροσσος fringe*, and *σωμα a body*; in allusion to the fimbriate arillus.

C. *Californica.*

Hab. Abundant on the borders of streams in the island of Catalina, off the coast of Upper California. Flowering in February.

* TRIFOLIUM.

§. * Physantha. (*Involucrarium.*) With the calyx 5-cleft, one or two of the divisions smaller. *Corolla* marcescent. The vexillum transformed into a physiform sac, which at length envelopes the very small wings and monopetalous carina. *Stigma* capitate. *Legume* stipitate, 2 to 5-seeded, included in the calyx.

T. * *stenophyllum.* Annual, branching from the base; leaves ternate, smooth and linear, distantly serrulate; stipules subulate, sparingly denticulate; peduncles elongated, filiform, heads small and nearly round, the vexillum, at length, forming a membranous inflated sac of equal breadth throughout, embracing the small wings and small carina, which is monopetalous, with but one broad claw attached to the vexillum.

Hab. The island of Catalina, near Santa Pedro, Upper California. Flowering in February.

T. * *Gambelii.* Perennial and decumbent, smooth, branching from the base; leaflets roundish-oval or cuneate-oval, obtuse, very minutely and sharply serrulate; stipules membranaceous, dilated, entire, with subulate, slender points; peduncles about the length of the leaves; involucrum about 8-cleft, the segments lanceolate, acuminate; teeth of the calyx trifid, or simple, with setaceous points; legume stipitate, 3 to 5-seeded; wings longer than the vexillum.

Hab. Island of Catalina, St. Simeon and Pueblo de los Angeles.

A large, robust species, with shortish branches, very large stipules, and heads of large flowers, which appear to have been whitish, with purple tips to the carina; heads of flowers 1 to 1½ inches across; the vexillum very wide below, so as to conceal the other petals; the wings and carina are also united; leaflets three-quarters of an inch long, and about the same breadth.

T. * *ciliatum.* ⊙. Smooth and erect, but little branched; lower leaves on very long petioles; leaflets cuneate-elliptic or oblong, obtuse, minutely and sharply serrulate; bractes adnate, subciliate, herbaceous, entire and acutely acuminate; capituli axillar and terminal, rounded, many-flowered, destitute of involucrum, but subtended by a cicatrised circle of points; the flowers attached to a cylindric torus, often ending in a long subulate point beyond the capitulum; segments of the calyx unequal, one of the teeth small, the rest lanceolate, sharply acuminated and bristly ciliated with stiff hairs; vexillum enclosing the other petals, which are small; legume flat, stipitate, about 1-seeded.

Hab. Pueblo de los Angeles, Upper California.

Stipules herbaceous; the leaves rather thick and strongly veined, with forked vessels; calyx nearly the length of the ochroleucous flower. This is again a **Physantha**, but with a proper involucrum.

T. ******denudatum*. ⊙. Smooth, stem erect, a little branched, lower leaves on very long petioles; leaflets obcordate or oboval, minutely and sharply serrulate; stipules membranaceous, entire and setaceously acuminated; capituli axillar and terminal, rounded, many-flowered, without an involucrum, but with a cicatrised circle in its place, the flowers attached to a conic torus of the same structure: segments of the calyx subequal, linear-lanceolate, sharply acuminated, nearly the length of the small ochroleucous flower; pod stipitate, about 2-seeded.

Hab. With the above, which it much resembles, but the vexillum is not unusually inflated.

About a span high; a rather small annual, and very smooth in every part. Leaflets about three-quarters of an inch long, three to four lines wide. Flowers small, with the teeth of the calyx very long and conspicuous.

T. **diversifolium*. ⊙. Small and smooth, branching from the base; leaflets linear or oblong, obtuse, perfectly entire, or repandly and rather sharply serrulate towards the apex; stipules nearly entire, with subulate points; peduncles longer than the leaves; heads very small, 8 to 10-flowered; involucrum 6 to 8-parted, the divisions entire, ovate, obtuse; calyx nearly half the length of the short flowers, the teeth simple and acute; legume 2-seeded.

Hab. Near St. Simeon, Upper California. Remarkable for the diversity of its foliage, some of the leaflets being linear and quite entire, others with the same slightly serrulate; in other plants they are cuneate-oblong, and even emarginate. The plant about a span high, with reddish flowers and a deep purple tipped carina.

ASTRAGALUS.

§. Microlobium. Annual or perennial? Flowers various. Legume small, scarcely exserted beyond the calyx, 1-seeded.

A. **Catalinensis*. ⊙. Nearly erect and much branched; stipules ovate, distinct, leaflets linear, deeply emarginate, five to seven pair, as well as the stem, scattered with appressed hairs; flowers ochroleucous, in capitate heads; segments of the calyx subulate, obtuse, thickly clad with rough white and black hairs, the segments all inclined to the lower side; legume scarcely exserted, scabrous.

Hab. On the island of Catalina, in Upper California. Flowering in February.

A. **nigrescens*. Annual; nearly erect and much branched; stipules ovate, acuminate; leaflets cuneate-linear, deeply emarginate, nearly smooth; flowers ochroleucous, in short oval spikes, at length nodding; segments of the calyx subulate, acute, clothed with shortish black hair; legume ovate, acute, and villous, a little exserted; cells 1-seeded.

Hab. With the above, which it greatly resembles, but different in the calyx and pod; flowers less crowded and pedicellate, the calyx not so deeply divided, nor clothed with such long rough hairs; bractes minute, chaffy, subulate; stipules partly united at the base.

PHLOX.

P. **bryoides*. Densely cæspitose, very small; leaves closely imbricated in 4 rows, the ciliar pubescence extending beyond the points of the oblong-lanceolate, very acute short leaves; flowers scarcely exserted; segments of the calyx obtuse; those of the corolla cuneate, entire.

Hab. On the dividing ridge of the Rocky Mountains. (Nuttall.)

P. **nana*. Dwarf and many-stemmed, viscidly pubescent; leaves rather long and linear, acute, the upper ones alternate; peduncles few, from the terminal branches, and as well as the calyx, pilose; flower exserted, with the tube twice the length of the calyx segments; border of the corolla longer than the tube, segments cuneate, emarginate.

Hab. Near Santa Fé, Rio del Norte. Flower large and red. Stems, many from the same perennial root, 4 to 5 inches high; the lower leaves 1½ inches long, from 1 to 2 lines wide, quite flat, and more or less clothed with a small glandular pubescence. Flowers few, and as large as any in the genus; segments of the calyx linear and acute; the tube of the corolla about twice its length. Corolla more than an inch across. Cells of the ovarium 2-seeded.

Polemonium **viscosum*. Dwarf; every part covered with a short, viscid pubescence; leaves nearly as long as the short flower stems, segments rounded, ovate or subcordate, very small and short; flowers in small terminal clusters; corolla much longer than the elongated lanceolale segments of the calyx; ovaries 2 or 3 to each cell.

Hab. On rocky ledges towards the sources of the Platte. Flowering in June. (Nuttall.)

GILIA.

G. **multiflora*. Biennial, erect and much branched from the base; stems low and pubescent; leaves pinnatifid, mostly trifid, segments narrow linear and mucronulate, above simple; flowers disposed to sessile or pedicellate axillary clusters; tube of the corolla about twice the length of the curved calyx; the segments of the corolla oblong and mucronulate; stamens somewhat exserted.

Hab. Sandy hills along the borders of the Rio del Norte, (New Mexico.) Flowering in August.

§. *Allophyllum. Annual. Leaves dissimilar and broad, obscurely 3 to 5-parted, with distinct partial petioles. Stem diffusely branched, the flowers small, partly funnel-form, disposed in cymose racemes. Capsule oval, the cells 2-seeded; the seeds roundish, not angular. Closely allied to *Collomia*, but with the cells of the capsule 2-seeded.

G. **divaricata*. Annual, diffusely branched and subdecumbent, viscidly puberulous; leaves alternate, digitately united at the base; leaflets 3 to 5, lanceolate acute, attenuated into a petiole, two or four much smaller than the others; branches forked, ending in cymose racemes; calyx obconic, divided nearly to the base, enlarging with the ripening of the fruit; the segments lanceolate acute, viscid; corolla small and slender, the tube more than twice the length of the small calyx; segments of the border oblong; stamens somewhat exserted, anthers roundish.

Hab. Monterey, Upper California.

§. *Chrysantha. Annual, pubescent. Leaves sessile, opposite, palmately divided, with entire linear segments. Flowers fastigiate, somewhat corymbose on filiform peduncles, (yellow) segments of the calyx acute. Corolla funnel-form, with a short tube, the segments oval and entire. Anthers ovate. Stamens exserted beyond the throat of the corolla. Ovules in the capsule about 20.

G. **aurea*. Corolla smooth, about twice the length of the calyx; segments of the leaves short and hispid, 3 to 6.

HAB. Santa Barbara. Flowering in April.

‡. Perennials or biennials, with the leaves often sparingly pinnatifid towards the extremity, or entire and linear, fleshy. Flowers in condensed clusters, capitate or in spikes, generally white. Corolla tubular, with a deeply 5-cleft, spreading border. Stamens shortly exserted or even with the summit of the tube. Stigmas very short. Ovaries 2 to 4 in a cell, rarely 1.—*ELAPHOCERA.

G. *congesta*. (Hooker.) Common in the Rocky Mountain region.

G. **crebrifolia*. Perennial and branching from the base; leaves entire, linear, acute and fleshy, smooth, crowded so as to conceal the stem; flowers in capitate clusters; stamens exserted to the length of the corolla segments.

HAB. Big Sandy Creek of the Colorado of the West. Flowering in July. (Nuttall.)

G. **spicata*. Perennial; leaves linear, fleshy; flowers in clusters, spiked; stem and calyx lanuginous, segments of the calyx linear acute and viscid; tube of the corolla exserted; stamens at the summit of the tube.

HAB. On the hills near Scott's Bluffs of the Platte. Flowers white, segments oblong. (Nuttall.)

G. **trifida*. Biennial; radical leaves linear; cauline trifid towards the extremity, fleshy and smooth; flowers clustered in spikes; stem and calyx pubescent, segments of the calyx linear and very acute; tube of the corolla exserted; stamens at the summit of the tube.

HAB. With the above, which it greatly resembles, except in the leaves; cells of the capsule each with three or four ovules. About a span high. (Nuttall.)

G. **pumila*. Perennial? branching from the base; flowers in terminal clusters, subtended by long leaves, woolly at their base; leaves fleshy, trifid at the extremities; segments narrow, linear, spinulose at points; corolla small, the tube exserted; stamens extending a little beyond the orifice of the tube.

HAB. Near the first range of the Rocky Mountains of the Platte. Flowering in May. (Nuttall.)

G. (COLLOMIOIDES) **filifolia*. ⊙. Erect and rigid; stems smooth below, nearly simple; leaves mostly trifid; the segments setaceous and rigid; capituli corymbose and whitely woolly; tube of the corolla about the length of the calyx; segments of the border lanceolate; stamens shorter than the corolla.

HAB. Near Santa Barbara, Upper California.

LEPTOSIPHON.

L. **bicolor*. Branching from the base; leaves 3, 5 to 7-cleft, the lowest much shorter; lower segments oblong-linear, cuneate, the upper subulate, all more or less roughly ciliate: segments of the calyx subulate, lanceolate; tube of the corolla three times the length of the funnel-formed border, its segments oval and rounded; stamens about half the length of the border.

HAB. On moist rocks, on the Oregon near the outlet of the Wahlamet: the only place where we saw it. (Nuttall.)

FENZLIA.

F. **speciosa*. Copiously branching from the base, nearly glabrous; leaves linear, entire; flowers pedunculate, (concolor, nearly white?) border of the corolla as long as the elongated segments of the smooth calyx.

Hab. On the island of Catalina. Flowering in February.

F. **concinna*. ⊙. Very dwarf and somewhat pubescent, branching from the base; leaves linear, flowers nearly sessile; segments of the calyx longer than the cup.

Hab. Near Santa Diego, Upper California. Flowering in May. (Nuttall.)

LEPTODACTYLON.

L. **cæspitosum*. Diffusely cæspitose, herbaceous and smooth; leaves imbricated, the segments about 3, flat, with sharp subulate points; the tube of the corolla exserted; segments cuneate, entire.

Hab. On the borders of the Platte, and hills near Scott's Bluffs. Flowering in May. (Nuttall.)

EUTOCA.

E. **albiflora*. ⊙. Glandularly pilose and viscid; stem erect and branching; leaves broad-ovate, shortly petiolate, subcordate, angularly biserrate; racemes curved, elongated, many-flowered, calyx segments spathulate-linear, obtuse; corolla not much longer than the calyx; capsule many-seeded.

Hab. Santa Barbara, Upper California.

E. **speciosa*. ⊙. Stem erect and simple; leaves broad-ovate, subcordate, doubly serrate, almost lobed, beneath strongly nerved, and, as well as the stem and calyx, hispid and viscidly glandular; racemes at the summit of the stem several, circinate, not elongated; flowers on short pedicels; segments of the calyx spathulate-linear; capsule with more than fifty roundish, very rugose seeds.

Hab. Near St. Diego, Upper California. (Nuttall.)

*EUCRYPTA.†

Calyx 5-parted, without external appendages; lobes oval or ovate. *Corolla* tubular campanulate, half 5-cleft, deciduous, without internal appendages; the lobes rounded; the æstivation with three segments exterior and two interior. *Stamens* 5, equal, arising from the base of the corolla, smooth, somewhat exserted; anthers small and oval, nectary none. *Ovary* depressed, globose, 1-celled; placentas 2, free, externally septiferous, each with four dissimilar ovules. *Style* elongated, very shortly bifid. *Stigmas* minute. *Capsule* 2-valved, dividing parallel with the placenta, presenting four roundish, rugose seeds; concealed in the adnate parietes, as it were, of each of these valves are, (when perfect,) two other seeds, which are even and elliptic! separated from the other seeds by a perfect membranaceous partition, parallel with the deep concavity of the valves, and each of these partitions is again divided internally by a proper transverse septum; so that the capsule is in fact 4-celled, with closed partitions, and the division of the adnate placentas presents the large circular cavity of the capsule, as if merely 1-celled, with two hemispherical valves! *Seed* with a corneous, large albumen; embryo straight, minute, central, not half the length of the albumen.—Annuals with bipinnatifid leaves with the flowers in loose racemes.

---

† So called in allusion to the concealed cells of the capsule.

E. **paniculata*. Flowers in a loose terminal panicle; stem viscid; uppermost leaves pinnatifid, segments of the calyx oval, obtuse.

Hab. Near Santa Barbara, Upper California. Flowering in April and May.

E. **foliosa*. Leaves all bipinnatifid, hirsute; racemes not longer than the leaves; segments of the calyx ovate, acute.

Hab. With the above, which it much resembles, but a lower, less viscid plant, with rather smaller flowers and capsules.

COLLOMIA.

§. Calyx obconic, scarcely cleft to the middle, with foliaceous segments. Flowers racemose, scattered. Intensely bitter to the taste.—*PICRACOLLA.

C. **linoides*. Leaves narrow-linear, scattered, ending in a short mucro; flowers small, scattered, subsessile, the calyx shorter than the tube of the corolla.

Hab. Banks of the Platte. (Nuttall.)

PHACELIA.

P. **canescens*. Canescent and hirsute; leaves spathulate, oblong or sublanceolate, entire; racemes condensed into circinate clusters; corolla twice the length of the calyx; stamens exserted, the filaments pilose.

Hab. In the Rocky Mountains and Blue Mountains of Oregon. (Nuttall.)

P. **glandulosa*. Annual or biennial, very pilose, with a soft, short, shining pubescence; the stems and calyx covered with blackish, viscid, resinous glands; leaves pinnatifid; the segments somewhat toothed, short and roundish; flowers shortly pedicellate in crowded circinate spikes; segments of the calyx oblong; stamens exserted; style pilose.

Hab. About Hams' Fork of the Colorado of the West, on dry, bare hills. (Nuttall.)

NAVARRETIA.

N. **minima*. ⊙. Smooth, dwarf, depressed and branched from the base; leaves somewhat bipinnately divided, with few and divaricate, subulately sharp segments; floral leaves simply pinnately dissected; calyx with three of the segments usually entire; corolla longer than the tube of the calyx: ovary cells 2-seeded.

Hab. Plains of the Oregon, near Walla-Walla. (Nuttall.)

Seldom more than an inch high; segments of the leaves quite acicular; flowers small and white, the tube exserted a little beyond the calyx: the stamens slightly exserted.

ERIOGONUM.

E. **acaule*. Very dwarf, stemless and cæspitose, the caudex much divided, leaves whitely tomentose, oblong-linear, reflected so as to be semi-cylindric; involucrum wholly sessile, few flowered, 4 or 5-toothed, the teeth very obtuse.

Hab. On the summit of the Rocky Mountains, near the Colorado of the West, at the highest land. A very remarkable dwarf species, forming dense tufts, independent of the subterraneous woody caudex, not an inch high, whitely tomentose. Leaves about a line wide and about 3 or 4 long. Flowers yellow and bright, externally somewhat pubescent, as well as the germs.

E. **Andinum.* Stemless, cæspitose, the caudex much divided; leaves small and spathulate, wholly and whitely tomentose, reflected on the margin; scapes all radical, terminating in a single capitulum; involucrum divided nearly to the base, the segments about 8, leafy; flowers yellow, small.

Hab. With the above. (Nuttall.)

With a woody brown subterraneous stem, terminating with cæspitose tufts of white, softly tomentose leaves; scape 2 or 3 inches high, with a small umbel of bright yellow flowers, which are pubescent externally, and reflected from the multifid involucrum, which is divided into eight small, leafy appendages. Germ smooth. Stigmas rather long.

E. **denudatum.* Annual, very smooth, excepting the under surface of the leaves, which are tomentose; leaves all radical and small, roundish reniform, on long petioles; stems many, all from the base, naked and scapoid, terminating in a single involucrum, or corymbosely terminated by 2 or 3; involucres double, the outer or bractes short and 3-cleft, the inner 8-toothed and strongly ribbed, bearing tufts of abortive filaments; perigonium smooth, (purple.)

Hab. In the Rocky Mountains of Upper California.

E. **racemosum.* Scape naked and whitely tomentose, as well as the elliptic ovate leaves, sparingly forked at the summit, with the solitary involucres sessile and forming a spike; involucrum very woolly, obsoletely toothed, subtended by a 3-cleft sheathing involucel or bractes; perianth smooth, oblong, attenuated at the base, (flowers ochroleucous?)

Hab. Colorado of the West.

E. **ellipticum.* Suffruticose; barren branchlets at the base of the scapoid stem; leaves elliptic or oblong-elliptic, beneath whitely tomentose, above nearly smooth; umbel compound, the forked divisions and general umbel involucrate; the involucels leafy and spreading; involucrum campanulate, lanuginous, 6-cleft, the segments rather longer than the tube, very many-flowered; perianth exserted, oblanceolate, attenuated to the pedicel, smooth, (or pubescent?)

Hab. Rocky Mountains. (Nuttall.)

β. *megacephalum.* Leaves oblong, subelliptic; perianth *pubescent;* umbel simple.

Hab. With the above.

E. **geniculatum.* Suffruticose, low and considerably branched; stems clustered; leaves linear, somewhat oblong, revolute on the margin, pubescent above, tomentose beneath; umbels simple, of few rays, the involucrum of the umbel long and leafy: proper involucrum campanulate, many-flowered, lanuginous; the border many-cleft, the divisions spreading and nearly as long as the cup; flowers yellow, numerous and small, obconic, externally pubescent towards the base.

Hab. In the Rocky Mountains, on the western slope. (Nuttall.)

E. **cernuum.* ⊙. Leaves all radical, round oval, upon longish petioles, very whitely tomentose beneath, less so above; scape smooth, two or three times dichotomous; involucres solitary, pedicellate, smooth, pedicels exserted, at length cernuus; involucrate bractes 3-cleft, acute, appressed; teeth of the involucrum acute; flowers few and small; segments of the perianth undulated.

Hab. On the plains of the Oregon and in the Rocky Mountains. (Nuttall.)

E. *_microtheca_. Suffruticose and dwarf; stems slender and clustered, at first arachnoid tomentose; leaves linear-oblong, nearly smooth above, whitely tomentose beneath, shortly petiolate, the petiolate widened at the base; umbel two or three times di-or trichotomous, each division bracteate; the involucrum small and distinct, pubescent, about 6-flowered; the teeth about six, ovate, obtuse; flowers yellow, very small.

Hab. On the sides of hills in Oregon, east of Walla-Walla. (Nuttall.)

E. *_campanulatum_. Leaves all radical, clustered upon a thickish caudex, linear-spathulate or narrowly oblong, narrowed below into longish petioles, whitely tomentose on both surfaces; scapes smooth and naked; umbel about twice trichotomous, few-flowered; bractes acute, a little tomentose on the margins; involucrum campanulate, about 6 to 10-flowered, smooth, with obtuse teeth; perianth yellow, smooth.

Hab. On the western declivity of the Rocky Mountains. (Nuttall.)

E. *_brevicaulis_. Branches very short, arising from a woody caudex, clustered, tomentose; leaves linear-lanceolate, long and rather acute, attenuated into a very long petiole, whitely tomentose beneath, less densely above; upper scaphoid stem very smooth; the bractes acuminated, tomentosely margined; umbel two or three times compounded, with very long rays; teeth of the canpanulate involucrum acute; flowers smooth, yellow, and very small.

Hab. On the upper plains of the Oregon. (Nuttall.)

E. *_gyrophyllum_. With a woody caudex; lower leaves clustered towards the base of the stem, oblong-lanceolate, acute, attenuated at the base, beneath tomentose and yellowish-white, above slightly pubescent and green; a verticel of leaves on the stem, about 6, subsessile oblong; umbel simple, of many short rays, with a leafy, spreading involucrum, tomentose within and without, many-flowered, shallow and simple, with longish, reflected teeth; perianth smooth, exserted.

Hab. Rocky Mountains of the Platte. (Nuttall.)

E. *_angustifolium_. Suffruticose, with infertile branches towards the base; leaves fasciculated and verticillated, linear-acute, narrowed below, whitely tomentose beneath, greenish but pubescent above, a verticel of about six leaves on the short stem; umbel simple, subtended by long, leafy bractes; divisions of the many-flowered involucrum reflected, pubescent; perianth reflected, smooth.

Hab. Western slope of the Rocky Mountains. (Nuttall.)

E. *_effusum_. Suffruticose; leaves linear, oblong, obtuse, beneath whitely tomentose, above pubescent, greenish; stem tomentose, two or three times trichotomous, divaricate; bractes ternate, lanceolate-acute; (flowers not seen.)

Hab. In the Rocky Mountains. (Nuttall.)

E. *_micranthum_. Leaves nearly all radical, arising from a thickish, woody caudex, linear-spathulate, or narrowly oblong-lanceolate, narrowed below into longish petioles, whitely tomentose on both surfaces; scapes, bractes and involucres tomentose; umbel decompound, pedicels of the second divisions very short, with about three involucres in each; bractes acute or acuminate; involucres campanulate, very small, the teeth obtuse; flowers smooth, small and yellow, dioicous?

HAB. In the Rocky Mountains of Oregon. (T. Nuttall.)

In aspect nearly allied to E. *campanulatum*, but with rather longer and narrower leaves, and the involucres most of them sessile.

E. **album*. Nearly stemless, with a woody caudex; leaves very whitely tomentose, spathulate-obovate, obtuse, usually longer than the petiole; bractes minute, appressed; umbel nearly simple, of few rays; involucrum tomentose, angular, with shortish teeth; flowers numerous, smooth.

HAB. Rocky Mountains of Oregon. (Nuttall.)

E. **rosmarinifolium*. Shrubby and much branched, smooth or somewhat pubescent; leaves clustered, nearly linear, revolute on the margin, slightly tomentose beneath; umbel pedunculate, compound, bractes leafy, numerous; involucres usually smooth, with acute teeth; perianth mostly glabrous.

HAB. Near Santa Barbara, Upper California. (Nuttall.)

β. foliolosum. Leaves more acute, with the petiole, young branches and the perianth, externally near the base, pilosely pubescent.

HAB. With the above.

E. **verticillatum*. Biennial; stem dichotomously branching, the offsets all subtended by verticels of sessile, lanceolate, very acute leaves, in 3's; radical leaves oblong, as well as the stems and branches whitely tomentose, attenuated below into long petioles; flowers wholly unknown.

HAB. Near St. Diego, Upper California.

We have not seen the plant in flower, but the remarkable characters, somewhat resembling those of E. *tomentosum*, and unlike any other species, perhaps justifies our giving it a passing notice.

E. **tenellum*. Densely cæspitose, with a woody, multifid, short caudex; leaves roundish, ovate or elliptic, on short petioles, not exserted from the cæspitose mass, whitely tomentose on both sides, as well as the scape and involucrum: capitulum solitary, rather small; involucrum cylindric, with obscure teeth, cluster of involucres 8 or 10 sessile; flowers small, purple; segments of the perianth oblong, not very unequal.

HAB. In the Rocky Mountains, on the western slope.

*EUCYCLA. †

Perianth membranaceous, colored, petaloid, dimorphous, the three outer divisions, orbicular, concave; the three inner linear-oblong, emarginate, connivent into a cylinder. *Stamens* 9, with short filaments, membranous at base. *Styles* three, of moderate length, with small, capitate stigmas. *Achenium* attenuated, triangular. *Embryo* excentric; radicle superior; cotyledons flat.

E. **ovalifolia*. Leaves all radical, short and roundish-ovate, whitely tomentose; capitulum made up of several sessile, whitely tomentose involucres; outer segments of the yellow perianth rather narrower at base, the inner emarginate segments exserted.

Eriogonum ovalifolium. Nutt. Jour. Acad. Nat. Sci., Philad.

HAB. Sources of the Missouri. Flowers bright yellow.

---

† In reference to the circular figure of the perianth.

E. **purpurea*. Leaves all radical, short and roundish-ovate, whitely tomentose; capitulum made up of several sessile, smoothish, tomentosely margined involucres; outer segments of the purple perianth orbicular, sometimes emarginate at base; the inner emarginate, narrow, segments scarcely exserted.

Hab. Rocky Mountains of the Platte.

Scape about a span high, arising from a multifid woody caudex; flowers larger than in the preceding and purple; filaments much shorter than the perianth, with a torn membranous margin at base; three stamens seated on each of the inner narrow segments; embryo rather short.

CHORIZANTHE.

C. **nudicaule*. Annual; radical leaves narrow spathulate, pubescent, with long, slender petioles, tomentose beneath; scapiform stem nearly naked, the summit trichotomous, the branchlets once or twice bifid, the flowers cymosely conglomerated; stem and very unequal toothed involucrum lanuginous; segments of the sessile exserted, perianth oblong, obtuse.

Hab. Santa Barbara, Upper California. Flowering in April.

C. **angustifolia*. Annual and small; leaves all linear-spathulate, softly lanuginous, as well as the branches; stem trichotomous, the heads of flowers somewhat racemose; involucrum pilose, with very unequal, uncinate spreading teeth, subulate to the base; perianth minute, the segments obtuse and without points.

Hab. Pueblo los Angeles, Upper California. Flowering in April.

C. **discolor*. Annual or biennial, and rather dwarf; leaves all radical in a rosulate cluster; the primary nearly smooth, rather large, spathulate-oblong, obtuse or emarginate, rather smooth above, whitely tomentose beneath; the petioles, stem and involucrum very hairy; the involucrum with spreading, very unequal teeth subulate to their base; scape low, doubly trichotomous, the flowers in cymose clusters.

Hab. St. Diego, Upper California.

C. **procumbens*. Annual or biennial, softly pilose; leaves spathulate, rather small; stem nearly naked, procumbent, the branches extremely divaricate and fragile, cymose; flowers in small clusters; involucrum with the teeth subulate to the base, slightly uncinate, unequal; perianth segments oblong, entire, (yellow) pubescent.

Hab. With the above. Flowering in April and May. (Nuttall.)

A very remarkable species by its procumbent habit and extreme fragility; the branchlets and clusters of flowers disjointing into numerous fragments on the slightest touch, like a *Loranthus*.

C. **uncinata*. Like the preceding, but with the teeth of the involucrum strongly and remarkably uncinate and nearly equal; the tube is almost smooth and strongly ribbed; it is likewise yellowish, as well as the pubescent perianth.

Hab. With the above. (Nuttall.)

§. Perianth exserted; the segments oblong, deeply fringed towards their base, (red) styles very long—Ptilosepala.

C. **fimbriata*. Annual; leaves all radical, spathulate-oval, pilose beneath; scape trichotomous; flowers in compound cymes; involucrum pubescent, the teeth subulate, unequal; perianth torn at the sides into long capillary fringe.

HAB. With the above. (Nuttall.)

PTEROSTEGIA.

P. **diphylla* ⊙. Pubescent; leaflets binate, each division obcordate or bilobed; common petiole on the lower leaves very long; achenium with the angles acute.

β. **biloba*. Leaves all nearly 2-lobed, the lobes somewhat emarginated.

HAB. Near Santa Barbara. Flowering in May.

P. **microphylla*. ⊙. Somewhat hirsute; leaflets binate, the lower ones twice compounded, divisions obcordate or unequally bilobed, the lobes sometimes with a single tooth; common petiole on the lower leaves elongated, the upper leaves sessile; achenium with obtuse angles.

HAB. With the above, which it greatly resembles, but always smaller leaved and more pubescent.

* NEMACAULIS.†

Involucrum, none; the flowers monoicous, disposed in round clusters at the joints of the filiform stem, subtended and mixed with elliptical bractes. *Perianth* obconic, 6-cleft. *Stamens* 3. *Styles* 3, very short, with small subcapitate stigmas. *Achenium* ovoid, angular only at the summit.—Californian annuals, the leaves wholly, and the bractes on the upper side densely and whitely tomentose; tems smooth or viscid, filiformly elongated and nearly naked, with the flowers disposed in sessile round heads at the joints of the stem, and subtended and mixed with small, elliptical, emarginated bractes. The flowers resemble those of *Eriogonum*, but the habit, absence of involucrum, and paucity of stamens, at once distinguish it.

N. **denudata*.

HAB. St. Diego, Upper California, in sandy places near to the sea shore. Flowering in April and May. (Nuttall.)

N. **foliosa*. With the above, from which it perhaps is not distinct; the leaves are much longer, the stem a little glutinous, and with most of the joints of the stem leafy.

*OXYTHECA.‡

Dioicous or monoicous. *Involucrum* small, 4 to 5-toothed, obconic, few-flowered, (3 to 5,) the teeth mostly spinulose. Female *perianth* closed to the summit, about 6-toothed; male and hermaphrodite shortly 6-cleft. *Stamens* about 6? *Achenium* compressed, 2-sided, elliptic. *Style* 3. *Embryo* excentric, in a somewhat fleshy perisperm, antitropus. *Cotyledones* oval, flat; radicle elongated, curved.—Annuals, with the leaves generally hirsute, nearly all radical, panicle or branches trichotomous and very divaricate, the ramifications subtended by verticillated bractes, free or united, into a cup. Involucres very small, solitary and pedicellate, 4 to 5-toothed, the teeth terminating in very long, sharp, rigid bristles, more rarely unarmed; perianth pubescent; the branches clothed with viscid, pedicellate glands. Somewhat allied to *Chorizanthe*, but with the involucrum more than 1-flowered, and the achenium compressed.

---

† From the singular prostrate, thread-like stem.

‡ In allusion to the peculiar involucrum.

O. * *dendroidea*. Leaves all linear, radical, hirsute ; scape divaricately di and trichotomous ; peduncles capillary ; involucrum about 3-flowered ; awns twice the length of the involucrum.

Hab. On the sand hills of the Rocky Mountains, near Lewis' River.

O. * *foliosa*. Leaves linear-lanceolate, hirsute ; divisions of the trichotomous stem subtended by verticils of leaves ; awns of the involucrum about its length.

Hab. With the above, which it much resembles ; it is, however, a much stouter plant. The leaves about 2 inches long and 2 to 3 lines wide.

§. *Gomphotheca.—*Dioicous*. Annual ; stem naked, verticillately branched and very divaricate. Involucrum small, about 5-toothed, 5-flowered ; without awns.

O. **glandulosa*. Leaves all radical, roundish and pilose ; branches verticillate, branchlets very numerous and divaricate, the ultimate ones and pedicels capillary ; flowers exserted, pubescent.

Hab. Rocky Mountains of Upper California.

* STENOGONUM.†

Monoicous. *Involucrum* none. Flowers naked, in axillary clusters. *Perianth* triangular, 6-cleft. *Stamens* 6 ? *Styles* minute, with capitate stigmas. *Achenium* conic, triangular, the angles sharp and salient, with a margin. A small, smooth, rather succulent annual plant of the Rocky Mountains, dichotomously subdivided and branched ; leaves entire, opposite or ternate ; flowers yellow, in axillary and terminal clusters, subtended by small, similar, leafy bractes. In the want of involucrum, approaching *Nemacaulis*, but the habit, flower and achenium are very distinct.

S. salsuginosum.

Hab. Bare saline hills of the Colorado of the West, in the Rocky Mountains. Flowering in June and July. (Nuttall.)

* HELIOMERIS.‡

Capitulum many-flowered, heterogamous ; rays ligulate, in a single series, neuter ; discal florets tubular, hermaphrodite. *Involucrum* irregularly imbricated and leafy, in about two series, and rather spreading. *Receptacle* conic, the palea embracing the florets, lanceolate and acute. *Corolla*, rays ligulate, (10—12,) those of the disk tubular, the tube short, throat wide and cylindric, border 6-toothed. *Stigmata* with oblong tips. *Achenia* laterally compressed, somewhat tetragonous, smooth, and without any pappus.

H. *multiflorus.*

A perennial tall herb, exactly resembling an *Helianthus*, with narrow, entire, somewhat scabrous leaves, the lower ones opposite ; flowers yellow, terminal, numerous.

Hab. In Upper California, (Mr. Gambel,) and in the Rocky Mountains, collected by Mr. Gordon.

CHRYSOTHAMNUS.

C. * *depressus*. Suffruticose and dwarf, nearly smooth ; leaves rigid, lance-linear, very acute, 1-nerved ; flowers in small corymbs ; involucrum closely imbricated, the scales in 5 rows, lanceolate, acutely acuminated, smooth the lowest very small, 1-nerved and somewhat carinate: pappus fulvous.

---

† In allusion to the sharp and slender angles of the achenium.

‡ In allusion to its close affinity to Helianthus.

Hab. In the sierra of Upper California. Nearly allied to *C. pumila*, but with a different involucrum. Achenia smooth, 5-ribbed.

* OXYTENIA.†

Capitulum heterogamous, many-flowered, the marginal ones in a single series, apetalous and feminine. Florets of the disk tubular, masculine. *Involucrum* composed of a single series of imbricated, ovate, rather rigid scales, (about 5.) *Receptaculum* small and flat; its palea narrow, spathulate and membranaceous, tufted with long hairs.—Male Flowers. *Corolla* obconic, with a narrow tube; border 5-toothed. *Anthers* distinct.—Female. *Corolla* none. *Stigmata* terete, filiform, smooth. *Achenia* bluntly obovate, obcompressed and ridged on the inner side, covered with dense white hairs, situated beneath the scales of the involucrum and without pappus.

O. *acerosa.*

A large, erect, spreading bush, with the inflorescence of an *Iva;* the leaves alternate, acerosely linear and rigid, pinnately divided into trifid or more compound divisions; capituli sessile, arranged in a compound panicle, as in many *Artemisias*. The whole plant very bitter, but with very little aroma. In habit more allied to *Artemisia* than *Iva*. Appears to be nearly related to *Euphrosyne* of Decandolle, as well as to *Pycrothamnus* and *Cyclachæna*, which last, however, is not sufficiently distinct from *Iva*.

Hab. Rocky Mountains, near Upper California. Flowering in October and November.

GNAPHALIUM.

G. * *ramosissimum*. Stem tall and stout, very much branched, the branches fastigiate; leaves and stem green but pubescent, the former linear-lanceolate, acuminate, strongly decurrent, viscidly pubescent; heads mostly pedunculate in scattered corymbs; scales of the yellowish-white involucrum oblong-lanceolate, subacute, longer than the florets; achenia smooth.

Hab. Monterey. Flowering in September and October.

STEPHANOMERIA.

S. * *elata*. Stems stout, erect, grooved and attenuated upwards; leaves almost filiformly linear, the lowest somewhat pinnatifid, the upper laciniately toothed at the embracing base; flowers in a small terminal panicle, (blue,) florets about 10; achenia cylindric-oblong, 5-grooved, somewhat rugose.

Hab. Santa Barbara, Upper California.

PTILOMERIS.

P. * *tenella*. Pappus of 8 to 10, cuneiform, obtuse fringed scales, in the rays minute; involucrum campanulate, about 8-leaved; scales ovate, somewhat obtuse; leaves mostly opposite, pinnatifid, the divisions few, narrow linear.

Hab. In the vicinity of Pueblo de Los Angeles, Upper California. Flowering in April. Very distinct from the *Hymenoxys Californica* of Hooker.

P. * *affinis*. Similar to the preceding, excepting the pappus, which is fimbriate along the margin of the narrow scales, all terminating in awns, excepting the rays, which have the same short awnless pappus as in the preceding.

---

† From οξυτμης acuminate. In allusion to the rigid narrow foliage.

Hab. With the former. That these are true species, as well as the one which I called *P. coronaria*, I am persuaded by the fact of their retaining the same relative character when cultivated.

HEMIZONIA.

H. **decumbens*. Annual, hirsute, pubescent; heads nearly solitary at the summit of the branches; leaves entire, linear, rather obtuse; rays 10 to 15, cuneate, 3-lobed; achenia rugose, with a short, curved beak; pappus of the disk flowers none.

Hab. Near Monterey. A good deal resembling H. *fasciculata*.

§. Heads hemispherical, many-flowered, corymbose; rays 20—25, receptacular chaff, in a single series, not united; pappus none; leaves pinnatifid.—Madiomeris.

H. **macrocephala*. Annual? hirsute; leaves irregularly pinnatifid, acute, upper one entire and sessile; flowers subcorymbose, head hemispherical, many-flowered; rays 20 to 30, cuneate, 3-lobed; achenia incurved, rugulose, with an oblique apex and stipitate at the base.

Hab. At St. Simeon, Upper California.

MONOLOPIA.

M. **lanceolata*. Young branches and leaves at first somewhat tomentose, at length nearly smooth; leaves oblong-lanceolate, distantly and irregularly toothed, sessile, all alternate, above entire and amplexicaule, acute; peduncles tomentose; leaves of the involucrum usually 8, ovate, divided nearly to the base; rays a little longer than the disk; florets all fertile; receptacle conic, smooth, with projecting papillæ.

Hab. Pueblo de los Angeles, Upper California. Flowering in April.

ERIGERON.

E. **stenophyllum*. Nearly smooth, stem even and cylindric, corymbose at the summit; leaves filiform, rather numerous and scattered, minutely scabrous; involucrum about 3 series, scales linear-lanceolate, acute; rays numerous, elongated, (30 or more,) 2 to 3-toothed; pappus fulvous, scabrous, with an outer short white series; achenia nearly smooth and compressed.

Hab. In California, (Monterey ?)

CHÆNACTIS.

C. **denudata*. Biennial; glandularly pubescent; peduncles exceedingly long: involucrum viscidly pubescent, rather tomentose; scales linear-lanceolate: ray-flowers irregular, expanded, shorter than the disk.

Hab. Pueblo de los Angeles, Upper California.

DIETERIA.

§. Involucrum hemispherical, the scales linear and acute; achenia obovoid and compressed, in the young state with numerous striatures, at length covered with a silky villus; pappus of several series of unequal scabrous bristles, the outer series shorter and more slender, (those in the ray, as in the rest of the genus, much shorter and less numerous.) Biennial or perennial, leaves pinnately lobed or incised; the lobes ciliated or pointed with bristles. Receptacle fimbrillate or chaffy. Flowers of one color.—Sideranthus. (Perhaps a genus.)

D. **gracilis.* Biennial, erect; stem pilose, branching above, the 1-flowered slender branchlets forming a fastigiate corymb; lower leaves pilose, pinnatifid; the segments oblong, obtuse, upper leaves linear, simple and sessile, entire, or minutely toothed, strongly ciliated with slender white bristles, which terminate all the lobes of the leaves; involucrum not viscid.

HAB. Santa Fé, (New Mexico.) Flowering in August.

MICROPUS.

M. **heterophyllus.* Annual, erect, simple, slender; densely lanuginous above, tomentose below; leaves below linear acute, above lanceolate, obtuse and sessile; capituli lateral and terminal, more densely lanuginous; discal florets about 5, masculine 3 to 5.

HAB. Santa Barbara, Upper California. Very nearly allied to ***M. augustifolius***, but the heads appear larger and more woolly, and the upper leaves are different.

POLYPAPPUS.

P. **sericeus.* Shrubby; younger branches and leaves sericeous; branches very leafy, ending in small corymbose clusters of flowers; leaves lance-linear, 1-nerved, entire, acute, at length nearly smooth; achenia smooth.

HAB. In Upper California, towards the Rocky Mountains.

BULBOSTYLIS.

§ *PSATHYROTUS.† Annual, and dichotomously branched; involucrum of a nearly single series of loosely imbricated, slightly striated scales; pappus short and scabrous, shorter than the florets; style not bulbous; achenia turbinate, densely villous.

B. **annua.* Very dwarf and dichotomously branched, clothed everywhere with greenish furfuraceous scales, and somewhat viscid; leaves cuneate-obovate, toothed at the apex; flowers nearly sessile, crowded into an irregular corymb.

HAB. Rocky Mountains, near Santa Fé.

QUERCUS.

Q. *Gambelli.* Leaves obovate, shortly petiolate, narrowed below, sinuately lobed, dilated and somewhat 3-lobed at the summit, beneath pubescent, the lobes rather obtuse, the upper one subdentate; fruit sessile, small, the cup hemispherical, scales ovate-acute; the glands ovate and acute, about half immersed in the cup; the conic summit short.

HAB. On the banks of the Rio del Norte, but not abundant. With the aspect of our northern oaks, but very distinct; in the leaf approaching a little to *L. obtusiloba*, but without any near affinity.

OROBANCHE.

O. **multiflora.* Pubescent; branching from the base; flowers subimbricated, scales lanceolate-acute; peduncles very short; flowers purplish, recurved; calyx deeply 5-cleft, bibracteate at base; segments long and linear; anthers tufted with hairs.

HAB. Sandy ground along the borders of the Rio del Norte. Flowering in September.

---

† In reference to the extreme fragility of the branches.

ASCLEPIAS.

A. **macrophylla*. Stem erect and smooth; leaves verticillate in 3's or 4's, very long and smooth, linear-lanceolate, below and on the branches opposite, on very short petioles; peduncles shorter than the leaves; umbels and flowers rather small and smooth; lobes of the corolla oblong-ovate; process of the nectaries strongly curved, acute; stype of the nectaries rather short.

Hab. Near Monterey, Upper California.

STANLEYA.

S. **fruticosa*. Smooth; leaves lanceolate, entire, or sparingly denticulate, attenuated into a longish petiole; lamina of the petals longer than the claws; stype more than twice the length of the pedicel.

Hab. Rocky Mountains of California. A shrubby species, with flowers very similar to those of *S. pinnatifida*. Leaves 2 to 2½ inches long, less than half an inch wide, the uppermost linear, all thick and apparently succulent.

BARTONIA.

B. **multiflora*. Biennial? stem smooth, white and shining, corymbosely branched; leaves narrow-lanceolate, sinuate, pinnatifid, attenuated below and sessile; flowers subtended by one or two linear bractes; petals 10, oblong-oval, obtuse; capsule urceolate, with three to four valves; segments of the calyx long and subulate; seeds in a double series, winged.

Hab. Sandy hills along the borders of the Rio del Norte. Santa Fé, (Mexico.) Flowering in August.

NICOTIANA.

N. **caudata*. Annual; leaves lanceolate, sessile, acuminated with very long caudated points; flowers conglomerated in a terminal panicle upon short peduncles; segments of the calyx and corolla much acuminated.

Hab. Near Monterey, Upper California.

ERIODYCTION.

E. **augustifolium*. Stem and younger leaves glutinous; leaves long, linear, entire, revolute on the margin; beneath canescent and reticulated flowers small, in paniculate cymes; sepals linear, somewhat hirsute.

Hab. On the sierra of Upper California; not seen in flower.

HUMULUS.

H. **Americanus*. Leaves 3 to 5-lobed, the upper sometimes entire; inner divisions lanceolate-acuminate, denticulate along the apex; scales of the cone ovate, acute, the lower ones acuminate.

Hab. Throughout the United States in alluvial situations. I have also most luxuriant specimens from the borders of streams (Ojito de Navajo) in the Rocky Mountains, near the line of New Mexico, collected by Mr. Gambel.

*CALYCODON.

Spikelets, 1-flowered, the flower sessile, bearded at the base. *Glumes* 2, unequal, shorter than the flower, membranaceous, the lower truncate, acutely 3-toothed, the lower smaller, 1-toothed. *Paleæ* 2, the lower sublanceolate, carinate, terminating in a longish scaprous awn, at length indurated, with a silky pilose margin; the upper palea lanceolate, 1-nerved, indurated and involute. *Anthers* 3. *Stigmas* 2, plumose.—A scabrous leaved grass, with a simple inarticulated culm, terminated by a loose, narrow, somewhat spiked panicle. So called in allusion to the remarkable toothing of the calyx.

C. montanum.

Hab. In the Rocky Mountains, near Santa Fé, Mexico. Flowering in August.

MUHLENBERGIA.

(§. *Trichochloa) **purpurea.* Annual, dwarf; much branched from the base and many-jointed; glumes very short and obtuse; paleæ and awns purple, the latter capillary, many times longer than the palea, the inner one acute and shortly awned.

Hab. Santa Barbara, Upper California, and the island of Catalina.

CALAMAGROSTIS.

(§ *Trichagrostis.—Spikelets 1-flowered, the flower sessile, with long hairs at the base. *Glumes* 2, subequal, membranaceous, acute, longer than the flower, the lower with a short terminal awn. *Paleæ* 2, very acute, the lower carinate, ending in an exserted capillary awn, the upper 1-nerved, acuminate. *Caryopsis* free, cylindric-oblong, much shorter than the glume.

C. **Andina.*

Hab. In Upper California, on the Colorado of the West.

FESTUCA.

§. *Chloropsis.—*Spikelets* unilateral, 2-flowered, or with the third abortive; flowers hermaphrodite, distichal. *Glumes* 2, carinate, unequal. *Paleæ* 2, the lower lanceolate, hirsute and concave, ending in a long, slender awn, the upper bicarinate. *Stamens* 1. *Ovary* sessile. *Styles* 2, very short, with plumose stigmas. *Caryopsis* lanceolate, smooth, concave above, nearly free.—A slender Californian annual grass, with a simple, filiform culm, ending in a small, nearly simple, spiked panicle; the spikelets sessile on a continuous, angular rachis, at length cernuus. So closely allied to the Chlorideæ, that at first I imagined it would prove a species of *Eutriana;* it is still, however, a *Festuca* in habit.

F. *microstachys.*

Hab. Pueblo de los Angeles, Upper California.

§. *Trachycarpha.—Spikelets many-flowered, secund, seated on the sides of a branching angular rachis. Glumes 2, the upper minute. Paleæ 2, the lower with a long awn and strongly ciliated on the margin. Caryopsis adhering to the upper palea.

F. *megalura.* Slender leaves and elongated, simple culm, smooth; panicle spiked, elongated, the branchlets angular and appressed; paleæ and their long awns very scabrous; uppermost floret of the spikelet abortive.

Hab. Santa Barbara, Upper California.

MELICA.

M. **panicoides.* Panicle elongated, many-flowered, the flowers small and numerous; glumes 1-flowered, with a small, infertile rudiment; paleæ smooth, scarcely longer than the acute glumes.

Hab. Santa Barbara. Flowering in April.

M. **poæoides*. Panicle narrow, many-flowered, the spikelets erect; *spikelets* with two flowers perfect, and a small rudiment extending beyond the acute glumes; lower palea 5-nerved.

Hab. Santa Barbara, Upper California.

* STENOCHLOA.†

Spikelets about 3-flowered; flowers distichal, hermaphrodite. *Glumes* 2, awnless, lanceolate, acute, much exceeding the spikelet in length. *Paleæ* 2, awnless, the lower concave, ovate, nearly nerveless and pubescent, the upper bicarinate. *Stamina* 3. *Ovarium* stipitate. *Styles* 2. *Stigmas* plumose. *Caryopsis* free, oblong-lanceolate.

S. *California*.

Hab. Island of Santa Catalina.

*PLEOPOGON.

Spikelets 1-flowered. *Glumes* 2, unequal, nearly as long as the flower; the lower with two awns, the upper entire, with one awn. *Paleæ* 1, the lower oblong, with the apex produced into a short awn, the upper without awn and 2-nerved. *Stamens* 3. *Styles* 2. *Stigmas* pilose, slender.—Culm compressed, somewhat branched; leaves linear, short and rigid; spikes terminal, simple, not jointed.

P. *setosum*.

Hab. Mountains of Santa Fé, Mexico.

MONARDA.

M. **pectinata*. Biennial? slightly pubescent; leaves oblong-lanceolate, denticulate, shortly petiolate; capituli proliferous, rather small, subtended by herbaceous bracts, some of them purplish, ovate-acute, strongly ciliated, as well as the elongated, setaceous teeth of the calyx; *corolla* widely ringent, the tube scarcely exserted beyond the calyx.

Hab. Near Santa Fé, New Mexico.

HEDEOMA.

H. **ciliata*. Perennial; minutely pubescent, branching much from the base; leaves linear-obtuse, shortly petiolate, entire; flowers, two or three together in the axills; *calyx* hirsute, with long, unequal ciliate teeth; *corolla* about the length of the calyx.

Hab. In the Rocky Mountains, towards Santa Fé.

SISYMBRIUM.

S. **reflexum*. Smooth; leaves somewhat lyrate pinnatifid, the terminal lobe toothed, upper leaves nearly entire and denticulate; flowers small; *petals* linear-spathulate, a little longer than the colored calyx; pods subterete, very long, nearly sessile, rigidly reflected and acuminated with the style.

Hab. Near St. Pedro, Upper California.

URTICA.

U. **holosericea*. Perennial and tall; leaves opposite, large, on long petioles, cordate-ovate, acute, above lanceolate, coarsely serrated, smooth, beneath silky villous, as well as the stems and petioles, the latter also pilose; flowers additional observations on the generation of the Opossum, which were read and referred to the Committee on the previous paper, viz.: Drs. Morton, Leidy, and Hallowell.

---

† So called in allusion to its macilent appearance.

Dr. Morton also read a letter from Dr. Middleton Michel, of Charleston, S. C., addressed to the Rev. Dr. Bachman, containing some highly interesting "Facts concerning the habits and generation of the Opossum." Referred to the above Committee.

Mr. Henry C. Lea communicated, for publication in the Journal, a paper entitled "Catalogues of the Tertiary Testacea of the United States; by Henry C. Lea." Referred to a Committee, consisting of Dr. Morton, Mr. Phillips, and Mr. Conrad.

Dr. Leidy read a paper describing a new fossil genus of Ruminantoid Pachyderms, (*Merycoidodon Culbertsonii;*) which was referred to Drs. Wilson, Morton, and Pickering.

On motion, *Resolved*, That a copy of the Proceedings, as far as published, be presented to the Rev. Dr. T. S. Savage.

On motion, also *Resolved*, That a copy of the first number of the New Series of the Journal be presented to M. Fischer de Waldheim.

April 11*th*, 1848.

Vice President MORTON in the Chair.

Letters were read—

From Prideaux John Selby, Esq., dated Twizell House, Northumberland, England, March 14th, 1848, returning acknowledgments for his election as a correspondent:—

From Richard Brown, Esq., dated Sydney Mines, Cape Breton, N. S., March 1st, 1848, offering for the acceptance of the Academy, a number of interesting coal fossils from that region:—

From Mr. Joseph Smith, of Amherst, N. S., dated March 29th, 1848, in relation to the "Joggins main seam of Coal" in that vicinity:—

From the Secretary of the American Philosophical Society, dated April 9th, 1848, acknowledging the receipt of the last number of the Proceedings.

A letter was read from the Rev. Dr. T. S. Savage, addressed to Dr. Hallowell, dated Natchez, Miss., Jan. 10th, 1848, containing the following interesting information, in relation to the habits of some specimens of Natural History from Africa, recently presented by the writer to the Society.

> "It was my intention to have made an earlier communication on the habits of several of the specimens of Natural History, which I sent to the cabinet of the Academy of Natural Sciences, from Liberia, but having been much occupied in matters of higher moment, I have not found the time to do it, and, even now, I must defer my observations on the ants, &c.
>
> At the present time, I propose to give a few facts respecting but one specimen of the *Saurians*, (of which I send several, some of which I think will prove to be new) and two *Ophidians*.
>
> 1. *Crocodilida*. At this distance of time, I cannot say whether I found this

to be an alligator or *gavial*, but, my impression is, that it was the latter. The question, however, you will be able to decide. It was captured at Cavalla, a mission station of the Protestant Episcopal Church, and a coast town belonging to the tribe of Africans called Grebos, the aboriginal inhabitants of the region of Cape Palmas. Its local native name is the same as that given to the dog, which, adopting as we do, the principles of Pickering for the reduction to writing of the Indian languages, is written *Kbink*, not easily expressed in English.

Its habits are the same, in general, as those of the crocodile proper and alligator. It inhabits the smaller fresh water streams and standing water in the low grounds, feeding on fish and aquatic reptiles. It digs a hole in the bed or banks of streams for a temporary abode, whence it springs upon its unwary prey. It deposits its eggs on the surface of the ground, and covers them over with leaves and light trash, in which particular, it differs from the crocodile proper, and alligator. It is timid and harmless, frequently taken by the natives and esteemed highly for food. This individual would not have escaped the caldron, had it not been for a fortunate junction of circumstances with their superstitions.

3. *Ophidians*. Amphisbœna.

I send a sketch taken soon after its capture, which accurately shows its colors in a recent state. It was captured by one of my Missionary associates on the beach.

It is stated in works on Natural History, that its food is principally ants. I am inclined to think this correct, as it is the opinion of intelligent natives in Africa, from the fact, that this animal inhabits the domicils of the "white ant" (Termes bellicosus of Smeathman, T. fatale of Linn.), and hence has received the name of *Nyonk-re-tedi*, literally the white ant snake.

It is not often visible, and its dubious character renders it an object of great dread to the natives, it being considered dangerous to look upon it. It is considered an extraordinary *Fetish*, i. e., something that has the power in itself of exerting a direct influence upon other bodies, for good or evil. Of this reptile an evil influence is always predicted.

Viper. (*Cerastes nasicornis*, Hal., Proceed. A. N. S. Vol. III. p. 319.)

The natives dread this serpent more than any other known.

It is very venomous—slow and sluggish in its movements—retreats from man, except when trodden on, or opposed in its progress.

It inhabits both high and low grounds, feeding on rats, the smaller reptiles, and fresh water fish that inhabit the marshes.

Its vicinity is known by a peculiar sound, somewhat like a suppressed groan; this is succeeded by a hissing or blowing noise. The former is a warning that every one acquainted with its habits remembers and knows well the necessity of heeding; the latter indicates a readiness to bite. When it is about to make an attack, it flattens its head and body, retracting itself upon its tail, and then, with its mouth enormously distended, its fangs protruded, and eyes flashing fire, it darts at its prey. It is said not to spring, but, with the latter part of its body and tail fixed to the ground, to strike at its victim.

The poison is very intense: generally it proves immediately fatal, but sometimes hours will intervene. It is probably modified in its action, in such cases, by the difference of susceptibility in persons, superficial character of the wound, and perhaps other incidental circumstances.

The native treatment for the bite of this, and all other serpents, is, to *suck out the poison:* make a free incision over the wound, and apply the juice of an unknown plant, sometimes a strong decoction of the same. Recovery is sometimes said to occur, but very rarely, however. A direct, deep flesh wound is supposed always to prove fatal.

The symptoms are, severe pain in the parts—rigors more or less palpable—sensation of heat—vomiting—profuse perspiration and purging. If not much reduction of vital energy attend, there is a possibility of recovery; but if, on the contrary, an early sickness comes on, there can be no hope—death soon follows.

A case occurred at one of our mission stations, supposed to be from the bite of this viper, though it is not certain. A young man had been out in search of Palm-nuts (fruit of the *Elais guiniensis.*) As he was returning, he heard the *warning sound*, but knowing the habits of the reptile, and supposing it to be on one side, he proceeded without precaution, and was bitten in the calf of his leg. He represented himself as being immediately disabled. He halloed till some one came to his relief, and was carried on the mission premises, which were at hand. It is supposed that a half hour, perhaps an hour, had passed. The leg, when first seen, was greatly swollen, nearly to the size of his thigh; the skin was tense and hot, with great pain in the surrounding parts. A free incision was made, and the blood pressed out. Stimulants and narcotics were freely given, and recovery succeeded.

The intensity of the poison has been manifested several times in the case of dogs. One case of this kind came under my immediate notice. Some of the mission scholars had permission to spend an afternoon in hunting. They procured for this purpose a valuable dog from a neighboring colonist. They had not left the road for the thicket long, before they heard a piercing cry of distress from the dog. They ran immediately to the spot, where they saw this viper, and the dog lying on his back, as if in convulsions. They shot the serpent, and carried them both to the road, by which time the dog was dead. From a minute examination into the circumstances of the case, I was convinced that not more than fifteen minutes could have transpired from the bite, to the death of the dog.

The original of the sketch I send you have in the cabinet. It was captured on the high grounds of my own premises. In company with one of my associates, I was drawn to the spot by the barking of our dogs. We found them surrounding the viper, and not twice its length from it. It was retracted upon itself, as already described, its body and tail flattened, and the latter acting as a fulcrum; from this, as a fixed point, it was darting forward alternately at the dogs. At every stroke, its jaws were widely extended, its fangs protruded to a fearful length, and its eyes rolled and flashed terribly to the beholder. My companion, being a good marksman, succeeded in bringing down the serpent without injury to the dogs. It measured as follows:—Length 3.9-12 feet; greatest circumference of the abdomen 9.1-12 inches; width of the head at base 3 inches; length of head 2.5-8 inches; length of the horny processes over the nose 7-16 of an inch. Its abdomen was considerably distended, on opening which, three rats, and other food undigested, were discovered.

It may not be irrelevant here to remark, that several cases of bites and stings of venomous reptiles and insects, have come under my notice at Cape Palmas, which I have treated on the principles above stated. I have heard of deaths from these causes, but none have fallen within my observation. One case, that of a colonist, nearly proved fatal, but I supposed it was from the time the poison had to act in the system before he came under treatment. He was a sawyer, and was in the act of preparing a log for the saw, when he was bitten by a snake which he observed retreating. Being intent upon his work at the time, he did not get a good view of it, but said it presented a green aspect,probably another species. He had but one companion, who carried him on his back for two or three hours, when he reached my premises. The wound was in the foot; this was greatly swollen, as was also the leg as high as the kneee. He seemed to be greatly prostrated and in great pain; vomited several times a light-colored watery fluid. I immediately administered, in large doses, strong rum and sulphate of morphine, and made a free incision over the wound. So reduced was the vitality of the parts that scarcely any blood flowed at first, but a passive hemorrhage came on subsequently, to stop which the blood vessels had to be taken up and tied. The whole limb up to the groin, became enormously swollen; a bad sore followed from the incision, and the cuticle of the leg, to a great extent, came off. He recovered at the end of three weeks.

This statement is made in works on Natural History, and by travellers, that the centipedes and scorpions of tropical climates are deadly poison. But in respect to those of West Africa, it is incorrect. Many stings from both have come within my notice, and have proved no more than the stings of bees and wasps."

Dr. Morton offered the following remarks on the ancient Peruvian crania from Pisoo, deposited by him this evening.

He pointed out the fact that all the crania in his collection from this locality, upwards of seventy in number, have been modified by pressure into artificial forms, in one of which the head is extended or elongated in the upward direction, though in very different degrees, while in another class, the pressure has been so applied, as to flatten the forehead, and to widen and elongate the whole structure, in the manner yet practised by the Indian tribes of Oregon. Dr. Morton read translations from the works of several of the earliest travellers and historians of Peru,—Cieza, Torquanda and Garciloso de la Vega, containing descriptions of these very forms of the head, and the artificial processes that were then in use to produce them.

Dr. M. concluded by remarking, that if no other evidence had descended to us than the statements of these authors, the facts would never have been believed; but we have now abundant proof of their correctness, in the multitudes of desiccated bodies that yet remain in the Peruvian cemeteries, and which, in that dry climate, have resisted the ravages of time and temperature for hundreds, and perhaps for thousands of years.

April 18*th*, 1848.

Vice President MORTON in the Chair.

A letter was read from William C. Redfield, Esq., dated New York, April 17, 1848, expressing his thanks and those of Professor Agassis, *February 22d.*

Specimen of Cynocephalus porcarius. From Dr. G. Watson.

Specimens (in flower) of Acacia, from New Holland. From Mr. Kilvington.

A collection of American Lepidoptera. From Dr. Heermann.

DONATIONS TO THE LIBRARY

IN JANUARY AND FEBRUARY, 1838.

January 4th.

Verhandlungen der Kaiserlich Russischen Mineralogischen Gesellschaft zu St. Petersburg, 1845, 1846. From the Imperial Mineralogical Society, through Charles Cramer, Esq.

American Journal of Agriculture and Science, Dec., 1847. From the Editor.

Dr. Wilson deposited the following works:

Second voyage dans l'intérieur de l'Afrique par le Cap de Bonne Espérance dans les années, 1783, 1784 and 1785: par F. Levaillant. 5 vols. 8vo.

Outlines of the Geography of plants, &c. By J. F. Meyen, M. D. Translated by Margaret Johnston. 8vo.

Illustrations of British Mycology: by Mrs. T. J. Hussey. Parts 1—7. 4to.

The Genera of Diurnal Lepidoptera, by Edward Doubleday. Part 13. 4to.

The Annals and Magazine of Natural History. No. 134.

Reports and Papers on Botany. By Zuccarini, Griseback, Nägell, and Link. 8vo.

Johannis Henrici Linckii de Stellis Marinis liber singularis. Folio.

A Statigraphical list of British fossils. By James Tennant, F. G. S. 12mo.

The Bird-fancier's Recreation; an 18mo. vol. published in London in 1783.

Reports on the progress of Zoology and Botany. 1841, 1842. 8vo.

Catalogues of the Leverian, London and Yarmouth Museums; in one vol. 8vo.

Catalogue of the Minerals in the United Service Museum; catalogues of the Museum of the Sussex Scientific and Literary Institution at Brighton; of the Finsbury Missionary Museum; of Sir Hans Sloan's Museum; of Racktrow's, Foster's and others' collections; and of the objects of Natural History and Ethnography composing the Guiana Exhibition.

A geographical and comparative list of the Birds of Europe and North America. By Charles Lucien Bonaparte. 8vo.

Lectures on Metallurgy, delivered at the London Institution, Feb., 1823, by John Taylor, Esq. 8vo.

The Mineral Topography of Great Britain. By A. W. Tooke, F. G. S.

Memorandum of objects of Geological interest in the vicinity of Dublin.

Examen critique du Cosmos de Humboldt; par A. J. Rey de Morande.

Report of an Expedition into the interior of British Guiana in 1835 and 1836. By Robert Heermann Schomburgk, Esq.

Description of a new species of Plesiosaurus, in the Museum of the Bristol Institution. By Samuel Stutchbury.

Verzeichness aller in Europe vorkommenden Geschlechter der Insekten nach Latreille's system; geordnet von Craft Ernst Hoffmann.

An Essay on the study of the Animal Kingdom. By Robert E. Grant, M. D.

Monographia Psittacorum; auctor Wagler. 4to.

Illustrations of the Zoology of South Africa. By Andrew Smith, M. D. No. 25. 4to.

Recueil de cent-trente Oiseaux. Folio.

January 11th.

Etwas neber die Natur-wunder in Nord-America, zusammengetragen von Charles Cramer. 8vo. From Mr. Conrad.

Naturgeschichte der Infusionsthiere von Prof. S Kutorga. 8vo. and Atlas. From the same.

Report and Resolves of the Legislature of Maine respecting international and literary exchanges. From Aaron Young, Jr., Esq.

Fauna der Vorwelt; von Dr. C. G. Giebel. Part 2. 8vo. From Mr. Lambert.

On the Cypress Timber of Mississippi and Louisiana. By M. W. Dickeson, M. D., and Andrew Brown. From Dr. Dickeson.

Proceedings of the Historical Society of Pennsylvania. Vol. 1. Nos. 11 and 12. From the Society.

Note sur le parallélisme des Depots Paléozoiques de l'Amerique Septentrionale avec ceux de l'Europe, &c. From the Author, M. de Verneuil.

A selection of the Correspondence of Linneus and other Naturalists from the original manuscripts. By Sir J. Edwards Smith. 2 vols. 8vo. Deposited by Dr. Wilson.

Oken's Isis. No. 8, for 1847. From the same.

Palæontology of New York. By James Hall. Vol. 1. 4to. From the Author.

January 18th.

Report of the Joint Library Committee of the Legislature of New York on the subject of International exchanges. From M. Alex. Vattemare.

Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire. Vols. 1 and 2, (to 1846 inclusive.) From Mr. Henry Denny, of Leeds, England.

Twenty-seventh Report of the Council of the Leeds Philosophical and Literary Society. 1847. From the Society.

Researches into the comparative construction of the Liver. By Joseph Leidy, M. D. From the Author.

Henry G. Bohn's Catalogue of Books. Vol. 1. 8vo. From the Publisher.

The Carices of the Northern United States: By John Carey. From Dr. Zantzinger.

Dr. Wilson deposited the following:—

Voyage autour du Monde sur les Corvettes l'Uranie et la Physicienne en 1817, 1820. Texte tomes 10, 4to; planches, tomes 4, folio.

Voyage autour du Monde de la Corvette La Favorite pendant les années 1830, 1831 and 1832. Texte, tomes 5, 8vo.; Hydrographie, tome 1, folio. Histoire du voyage, tome 1, folio.

Avium species novæ, quas in itinere per Brasiliane an. 1817—1820, collegit et descripsit Dr. T. B. De Spix. 2 vols., folio.

Manuel du Libraire et de l'amateur de livres: par T. C. Brunet. 5 vols. 8vo.

February 1st.

Bibliotheca historico-naturalis: von Wilhelm Englemann. Erster band. 8vo. Deposited by Dr. Wilson.

Transactions of the American Philosophical Society. Vol. X. new series, Part 1. 4to. From the Society.

The American Journal of Science and Arts. Second series, No. 13. January, 1848. From the Editors.

The Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 4, No. 3. From the Association.

American Journal of Agriculture and Science. Vol. 7. No. 1. From the Editor.

A statement of the claims of Charles T. Jackson, M. D., to the discovery of the applicability of Sulphuric Ether to the prevention of pain in surgical operations. By Martin Gay, M. D. From Dr. Jackson.

Tribute to American Geologists. (Translated from "Leçons de Geologie pratique par M. Elie de Beaumont," by Charles T. Jackson, M. D.) From the same.

Observations on the Temple of Serapis at Pozzuoli, near Naples, &c. By Charles Babbage, Esq. 8vo. 1847. From the Author.

Revue Zoologique. No 10, for 1847. Deposited by Dr. Wilson.

The Anatomy of the Human Body. By William Cheselden. 8vo. From Dr. Dawson, of Philadelphia.

A compendium of the Anatomy of the Human Body. By Andrew Fyfe. 3 vols. 8vo.

A very old work (small 4to., without title) on "Dystillations," in four books or parts. From Dr. Morton.

February 8th.

Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 4, No. 4. From the Association.

Lamarck's Genera of Shells. Translated from the French. By Agustus A. Gould, M. D. 12mo. From Prof. Haldeman.

Transactions of the Zoological Society of London. Vol. 3, Part 4. 4to. Proceedings of the same, Nos. 155 to 177 inclusive. Reports of the Council and Auditors of the same for 1847; and List of the Fellows, Honorary, Foreign, and Corresponding Members of the same for 1847. From the Society.

Bulletin of the Historical Society of Pennsylvania. Vol. 1, No. 13. Dec., 1847. From the Society.

Objections to the theories severally of Franklin, Dufay and Ampère, &c. By Robert Hare. From the Author.

On a law of cohesive attractions as exemplified in a Crystal of Snow. By James D. Dana. From the Author.

On certain laws of cohesive attraction. By James D. Dana. From the same.

Origin of the constituent and adventitious minerals of Trap and the allied rocks. By James D. Dana. From the same.

Notice of Dr. Blum's treatise on pseudomorphous minerals, and observations on pseudomorphism. By James D. Dana. From the same.

February 15th.

Transactions of the Linnean Society of London. Vol. 22. Part 2. 4to. London, 1847; Proceedings of the same, Nos. 30 to 33 inclusive; and List of the same for 1847. From the Society.

The Journal of the Indian Archipelago and Eastern Asia. Nos. 1, 2 and 3. July, Aug. and Sept., 1847. Singapore. From the Editor.

The American Journal of Agriculture and Science. Vol. 7, No. 2. From the Editor.

February 22nd.

The Musci and Hepaticæ of the Northern United States. By Wm. S. Sullivant. From Dr. Asa Gray.

The Carices of the Northern United States. By John Carey. From the same.

Proceedings of the American Academy of Arts and Sciences, pp. 161 to 296. From the Academy.

Dr. Wilson deposited the following works:—

Elements of Conchology, according to the Linnean system: By the Rev. E. J. Burrow, 8vo.

Elements of Conchology. By Emanuel Mendes da Costa. 8vo.

Description d'une collection de Mineraux, formée par M. Henri Heuland. 3 vols. 8vo. and Atlas.

Outlines of the Geology of the vicinity of Cheltenham. By R. J. Murchinsom. New edition. 8vo.

A history of the Molluscous Animals of Scotland, with an account of the Cirrhipedal Animals of the N. E. District. By Wm. Macgillivray. Second edition. 12mo.

The Ancient World, or picturesque sketches of Creation. By D. T. Anstead. 12mo.

Journal of an Overland Expedition in Australia from Moreton Bay to Port Essington, in 1844 and 1845. By Dr. Ludwig Leichardt. 8vo.

Description of the Rapacious Birds of Great Britain. By Wm. Macgillivray. 12mo.

Ornithologia nova. 2 vols. 12mo. Birmingham, 1743.

Wanderings in South America, the North West of the United States, and the

Antilles, in 1812, 1816, 1820 and 1834, &c. By Charles Waterton, Esq. Fourth edition. 12mo.

A Synopsis of the Birds of Australia and the adjacent islands. By John Gould. Parts 1 to 3. 8vo.

Narrative of a Journey to the shores of the Polar Sea, in 1819, 1820, 1821 and 1822. By John Franklin, Capt. R. N. 4to.

Narrative of a Second Expedition to the Shores of the Polar Sea in 1825, 1826 and 1827. By John Franklin, Capt. R. N., &c. 4to.

Historia naturalis Testaceorum Brittaniæ. By Emanuel Mendes da Costa. 4to.

Indian Zoology. By Thomas Pennant. Second edition. 4to.

A Natural History of British Birds, &c. By Mr. Hayes. Folio.

The Annals and Magazine of Natural History. Nos. 135, 136.

The Quarterly Journal of the Geographical Society of London. Vol. 3. Part 1.

Illustrations of British Mycology. By Mrs. J. T. Hussey. Part 9. 4to.

The Genera of Diurnal Lepidoptera. By Edward Doubleday. Part 15. 4to.

The Genera of Birds. By George Robert Gray. Part 42. 4to.

A list of Rocks and Strata, arranged in the order they generally occur in, with reference to Sowerby's works.

Dr. Wilson also presented a very fine collection of Medals in Copper bronzed, executed in Paris, and arranged on a board covered with crimson velvet, and perforated for the purpose of receiving them; the whole enclosed in a highly finished frame of black walnut, glazed on both sides. The collection embraces the following:—

Georges Cuvier, Linnæus, Hans Sloane, Priestly, Xavier Bichat, Bergman, F. J. V. Broussais, Lavoisier, E. Ruppell, Vesalius, Geoffroy St. Hilaire, Bartholinus, F. J. Gall, Gaspard Monge, Jean and J. P. J. D'Arcet, Pictet, O. de Serres, Lacaille, Berzelius, Colombus, Saussure, Fernel, Aldrovandus, Buffon James Cook, Lavater, Bernard de Jussieu, J. J. Rousseau, Galvani, Newton, Dupuytren, Kant, Bonnet, Haller, Ambroise Parè Franklin, J. Coster, Harvey, Sydenham, Roger Bacon, Boerhaave, P. A. Beclard, Leibnitz.

March 7th, 1848.

DR. BRIDGES in the Chair.

Dr. Morton read a communication from the Rev. Dr. Bachman, of Charleston, S. C., entitled, "Notes on the generation of the Virginian Opossum (Didelphus Virginiana);" which was referred to the following Committee: Dr. Morton, Dr. Leidy, and Dr. Hallowell.

Mr. Pierce stated to the Society, that within the last week, he had had an opportunity of seeing several interesting specimens of a hybrid between the Guinea and the Peacock. They were the property of a farmer residing near Phœnixville, in this State, were about four months old, and possessed in a marked degree the distinctive characters of both parents. He expressed a hope of being enabled to obtain one or more of them for the Society's collections.

March 21st, 1848.

Vice President MORTON in the Chair.

A letter was read from Sir Michael Faraday, dated Royal Institution, London, 24th February, 1818, acknowledging the receipt of his notice of election as a Correspondent.

Dr. Hallowell read a paper, entitled "Descriptions of two new species of *Onychocephalus* from the Western Coast of Africa;" and also communicated some "Notes of the post mortem appearance of a *Cynocephalus papion*, which died at the Menagerie in Philadelphia." Both of which papers were referred to a Committee, consisting of Dr. Leidy, Dr. Morton, and Dr. Wilson.

Dr. Leidy presented a communication from Prof. Haldeman, describing numerous species of *Aphedius*, and designed as a supplement to his Entomological papers, read at previous meetings of the Society, and reported for publication in the next number of the Journal. Referred to the Committee on the former papers.

April 4th, 1848.

MR. PHILLIPS in the Chair.

A letter was read from the Rev. Dr. Savage, addressed to Dr. Hallowell, dated Natchez, Mississippi, March 10th, 1848, desiring numbers of the Proceedings in which he was deficient, and in relation to a communication which he had transmitted for publication in the Proceedings, on the habits of some of the Reptilia of Western Africa.

A letter was read from the Secretary of the "Société Imperiale des Naturalistes de Moscou," dated Moscow, May, 1847, accompanying the donation of the Numbers of the Bulletin of the Society, announced this evening.

The Rev. Dr. Bachman communicated, through Dr. Morton, some additional observations on the generation of the Opossum, which were read and referred to the Committee on the previous paper, viz.: Drs. Morton, Leidy, and Hallowell.

Dr. Morton also read a letter from Dr. Middleton Michel, of Charleston, S. C., addressed to the Rev. Dr. Bachman, containing some highly interesting "Facts concerning the habits and generation of the Opossum." Referred to the above Committee.

Mr. Henry C. Lea communicated, for publication in the Journal, a paper entitled "Catalogues of the Tertiary Testacea of the United States; by Henry C. Lea." Referred to a Committee, consisting of Dr. Morton, Mr. Phillips, and Mr. Conrad.

Dr. Leidy read a paper describing a new fossil genus of Ruminantoid Pachyderms, (*Merycoidodon Culbertsonii;*) which was referred to Drs. Wilson, Morton, and Pickering.

On motion, *Resolved*, That a copy of the Proceedings, as far as published, be presented to the Rev. Dr. T. S. Savage.

On motion, also *Resolved*, That a copy of the first number of the New Series of the Journal be presented to M. Fischer de Waldheim.

April 11*th*, 1848.

Vice President MORTON in the Chair.

Letters were read—

From Prideaux John Selby, Esq., dated Twizell House, Northumberland, England, March 14th, 1848, returning acknowledgments for his election as a correspondent:—

From Richard Brown, Esq., dated Sydney Mines, Cape Breton, N. S., March 1st, 1848, offering for the acceptance of the Academy, a number of interesting coal fossils from that region:—

From Mr. Joseph Smith, of Amherst, N. S., dated March 29th, 1848, in relation to the "Joggins main seam of Coal" in that vicinity:—

From the Secretary of the American Philosophical Society, dated April 9th, 1848, acknowledging the receipt of the last number of the Proceedings.

A letter was read from the Rev. Dr. T. S. Savage, addressed to Dr. Hallowell, dated Natchez, Miss., Jan. 10th, 1848, containing the following interesting information, in relation to the habits of some specimens of Natural History from Africa, recently presented by the writer to the Society.

"It was my intention to have made an earlier communication on the habits of several of the specimens of Natural History, which I sent to the cabinet of the Academy of Natural Sciences, from Liberia, but having been much occupied in matters of higher moment, I have not found the time to do it, and, even now, I must defer my observations on the ants, &c.

At the present time, I propose to give a few facts respecting but one specimen of the *Saurians*, (of which I send several, some of which I think will prove to be new) and two *Ophidians*.

1. *Crocodilida*. At this distance of time, I cannot say whether I found this

to be an alligator or *gavial*, but, my impression is, that it was the latter. The question, however, you will be able to decide. It was captured at Cavalla, a mission station of the Protestant Episcopal Church, and a coast town belonging to the tribe of Africans called Grebos, the aboriginal inhabitants of the region of Cape Palmas. Its local native name is the same as that given to the dog, which, adopting as we do, the principles of Pickering for the reduction to writing of the Indian languages, is written *Kbink*, not easily expressed in English.

Its habits are the same, in general, as those of the crocodile proper and alligator. It inhabits the smaller fresh water streams and standing water in the low grounds, feeding on fish and aquatic reptiles. It digs a hole in the bed or banks of streams for a temporary abode, whence it springs upon its unwary prey. It deposits its eggs on the surface of the ground, and covers them over with leaves and light trash, in which particular, it differs from the crocodile proper, and alligator. It is timid and harmless, frequently taken by the natives and esteemed highly for food. This individual would not have escaped the caldron, had it not been for a fortunate junction of circumstances with their superstitions.

3. *Ophidians.* Amphisbœna.

I send a sketch taken soon after its capture, which accurately shows its colors in a recent state. It was captured by one of my Missionary associates on the beach.

It is stated in works on Natural History, that its food is principally ants. I am inclined to think this correct, as it is the opinion of intelligent natives in Africa, from the fact, that this animal inhabits the domicils of the "white ant" (Termes bellicosus of Smeathman, T. fatale of Linn.), and hence has received the name of *Nyonk-re-todi*, literally the white ant snake.

It is not often visible, and its dubious character renders it an object of great dread to the natives, it being considered dangerous to look upon it. It is considered an extraordinary *Fetish*, i. e., something that has the power in itself of exerting a direct influence upon other bodies, for good or evil. Of this reptile an evil influence is always predicted.

Viper. (*Cerastes nasicornis*, Hal., Proceed. A. N. S. Vol. III. p. 319.)

The natives dread this serpent more than any other known.

It is very venomous—slow and sluggish in its movements—retreats from man, except when trodden on, or opposed in its progress.

It inhabits both high and low grounds, feeding on rats, the smaller reptiles, and fresh water fish that inhabit the marshes.

Its vicinity is known by a peculiar sound, somewhat like a suppressed groan; this is succeeded by a hissing or blowing noise. The former is a warning that every one acquainted with its habits remembers and knows well the necessity of heeding; the latter indicates a readiness to bite. When it is about to make an attack, it flattens its head and body, retracting itself upon its tail, and then, with its mouth enormously distended, its fangs protruded, and eyes flashing fire, it darts at its prey. It is said not to spring, but, with the latter part of its body and tail fixed to the ground, to strike at its victim.

The poison is very intense: generally it proves immediately fatal, but sometimes hours will intervene. It is probably modified in its action, in such cases, by the difference of susceptibility in persons, superficial character of the wound, and perhaps other incidental circumstances.

The native treatment for the bite of this, and all other serpents, is, to *suck out the poison:* make a free incision over the wound, and apply the juice of an unknown plant, sometimes a strong decoction of the same. Recovery is sometimes said to occur, but very rarely, however. A direct, deep flesh wound is supposed always to prove fatal.

The symptoms are, severe pain in the parts—rigors more or less palpable—sensation of heat—vomiting—profuse perspiration and purging. If not much reduction of vital energy attend, there is a possibility of recovery; but if, on the contrary, an early sickness comes on, there can be no hope—death soon follows.

A case occurred at one of our mission stations, supposed to be from the bite of this viper, though it is not certain. A young man had been out in search of Palm-nuts (fruit of the *Elais guiniensis.*) As he was returning, he heard the *warning sound*, but knowing the habits of the reptile, and supposing it to be on one side, he proceeded without precaution, and was bitten in the calf of his leg. He represented himself as being immediately disabled. He halloed till some one came to his relief, and was carried on the mission premises, which were at hand. It is supposed that a half hour, perhaps an hour, had passed. The leg, when first seen, was greatly swollen, nearly to the size of his thigh; the skin was tense and hot, with great pain in the surrounding parts. A free incision was made, and the blood pressed out. Stimulants and narcotics were freely given, and recovery succeeded.

The intensity of the poison has been manifested several times in the case of dogs. One case of this kind came under my immediate notice. Some of the mission scholars had permission to spend an afternoon in hunting. They procured for this purpose a valuable dog from a neighboring colonist. They had not left the road for the thicket long, before they heard a piercing cry of distress from the dog. They ran immediately to the spot, where they saw this viper, and the dog lying on his back, as if in convulsions. They shot the serpent, and carried them both to the road, by which time the dog was dead. From a minute examination into the circumstances of the case, I was convinced that not more than fifteen minutes could have transpired from the bite, to the death of the dog.

The original of the sketch I send you have in the cabinet. It was captured on the high grounds of my own premises. In company with one of my associates, I was drawn to the spot by the barking of our dogs. We found them surrounding the viper, and not twice its length from it. It was retracted upon itself, as already described, its body and tail flattened, and the latter acting as a fulcrum; from this, as a fixed point, it was darting forward alternately at the dogs. At every stroke, its jaws were widely extended, its fangs protruded to a fearful length, and its eyes rolled and flashed terribly to the beholder. My companion, being a good marksman, succeeded in bringing down the serpent without injury to the dogs. It measured as follows:—Length 3.9-12 feet; greatest circumference of the abdomen 9.1-12 inches; width of the head at base 3 inches; length of head 2.5-8 inches; length of the horny processes over the nose 7-16 of an inch. Its abdomen was considerably distended, on opening which, three rats, and other food undigested, were discovered.

It may not be irrelevant here to remark, that several cases of bites and stings of venomous reptiles and insects, have come under my notice at Cape Palmas, which I have treated on the principles above stated. I have heard of deaths from these causes, but none have fallen within my observation. One case, that of a colonist, nearly proved fatal, but I supposed it was from the time the poison had to act in the system before he came under treatment. He was a sawyer, and was in the act of preparing a log for the saw, when he was bitten by a snake which he observed retreating. Being intent upon his work at the time, he did not get a good view of it, but said it presented a green aspect, probably another species. He had but one companion, who carried him on his back for two or three hours, when he reached my premises. The wound was in the foot; this was greatly swollen, as was also the leg as high as the kneee. He seemed to be greatly prostrated and in great pain; vomited several times a light-colored watery fluid. I immediately administered, in large doses, strong rum and sulphate of morphine, and made a free incision over the wound. So reduced was the vitality of the parts that scarcely any blood flowed at first, but a passive hemorrhage came on subsequently, to stop which the blood vessels had to be taken up and tied. The whole limb up to the groin, became enormously swollen; a bad sore followed from the incision, and the cuticle of the leg, to a great extent, came off. He recovered at the end of three weeks.

This statement is made in works on Natural History, and by travellers, that the centipedes and scorpions of tropical climates are deadly poison. But in respect to those of West Africa, it is incorrect. Many stings from both have come within my notice, and have proved no more than the stings of bees and wasps."

Dr. Morton offered the following remarks on the ancient Peruvian crania from Pisoo, deposited by him this evening.

He pointed out the fact that all the crania in his collection from this locality, upwards of seventy in number, have been modified by pressure into artificial forms, in one of which the head is extended or elongated in the upward direction, though in very different degrees, while in another class, the pressure has been so applied, as to flatten the forehead, and to widen and elongate the whole structure, in the manner yet practised by the Indian tribes of Oregon. Dr. Morton read translations from the works of several of the earliest travellers and historians of Peru,—Cieza, Torquanda and Garciloso de la Vega, containing descriptions of these very forms of the head, and the artificial processes that were then in use to produce them.

Dr. M. concluded by remarking, that if no other evidence had descended to us than the statements of these authors, the facts would never have been believed; but we have now abundant proof of their correctness, in the multitudes of desiccated bodies that yet remain in the Peruvian cemeteries, and which, in that dry climate, have resisted the ravages of time and temperature for hundreds, and perhaps for thousands of years.

April 18*th*, 1848.

Vice President MORTON in the Chair.

A letter was read from William C. Redfield, Esq., dated New York, April 17, 1848, expressing his thanks and those of Professor Agassiz, for the specimens of fossil fishes loaned to them by the permission of the Society, for comparison and description, and returning the same to the Cabinet.

April 25th, 1848.

Vice President MORTON in the Chair.

The Committee to whom was referred Dr. Bachman's communications in relation to the generation of the Opossum, and also the letter of Dr. Middleton Michel, of Charleston, S. C., on the same subject, addressed to the Rev. Dr. Bachman, reported in favor of publication.

Notes on the Generation of the Virginian Opossum (Didelphis Virginiana.)

BY JOHN BACHMAN, D. D.

Under an impression that the following extracts from notes made at intervals during the last few years, may throw some additional light on the natural history of one of the most interesting of American quadrupeds, I communicate them for the information of the Society.

March 1st, 1846.—Received to-day five female opossums, captured last night. One of these had ten young in the pouch ; another nine ; the third had eleven ; the fourth fourteen. They were all very diminutive, and appeared to be nearly the same age—about two or three days. The fifth was a small animal of the preceding autumn, and I was doubtful whether she had been impregnated.

March 3d.—On the evening of this day, I examined my small female opossum. The mammary organs were considerably distended, and I began to suspect that I had erred in my previous conjectures, and concluded to dissect her on the following day.

March 4th.—At 7 o'clock this morning, when prepared to commence my dissection of the opossum, I discovered three young in the pouch, and supposing that so small a female would produce no additional number, I concluded that I would spare her life. She was confined in a box in a room where I was writing. When I occasionally looked at her I found her lying on her side, her body drawn up in the shape of a ball; the vulva appeared to reach the pouch, which was occasionally distended with her paws. At 6 o'clock in the afternoon, as she had appeared very restless for several hours, I was induced to examine her again, when I discovered she had added four more to her previous number, making her young family now to consist of seven. With no inconsiderable labor, and the exercise of much patienee, I removed three of the young from the teat, one of which perished under the process. The three weighed twelve grains, averaging four grains each. I replaced the two living ones in the pouch; at 9 o'clock examined her and found the young again attached to the teats.

The young were naked, blind, ears protuberances covered by an integument; mouth closed, with the exception of a very small orifice sufficiently large to receive the small attenuated teat. Tail ½ inch in length.

March 11.—Weighed the largest of the young, and found that it had increased to 30 grains. Length of body 1½ inch, tail ¾ inch. The nostrils were now open. The young were very tenacious of life, as on removing two they remained alive through a cool night in a room containing no fire, and still evidenced a slight motion at 12 o'clock on the following day. The teats of the mother, after the young had been gently drawn off, measured an inch in length, having been much distended, and appeared to have been drawn into the stomach of the young.

March 16th.—The dark color of the eye can be seen through the transparent skin, but it is still perfectly closed. A few hairs have made their appearance on the moustache. The orifice of the ears beginning to be developed. Nails visible and sharp. The pouch of the young females is quite apparent, and the sexes may be determined as soon as born. They voided urine and excrement —used their prehensile tails, which were seen entwined around the necks of others even at a week old.

February and March, 1847.—Made a number of observations on a large number of females. As they, however, all had young in their pouches before I procured them, I will only notice one experiment made in order to ascertain the manner in which the young became attached to the teats.

March 11th.—Conjecturing that the young were aided by the mother in finding the teat, and believing that she would not readily adopt the young of another, or afford them any assistance, I removed six of the ten which composed her brood—returned two of her own to the pouch, together with three others, fully double the size, that had been obtained from another female. She was soon observed doubled up, with her nose in the pouch, and continued so for an hour, when she was examined, and one of her own small young was found attached to the teat. Seven hours afterwards she was again examined, and both the small ones were attached, but the three larger ones still remained crawling about the pouch.

March 12th.—The mother seemed now to have adopted the strangers, and the whole family of different sizes were deriving sustenance from her.

February 11th, 1848.—Having received from the country a large female that appeared to be impregnated, I this day dissected her. As soon as the uterus was removed from the body of the animal, which had just been killed and was yet warm, I observed the whole mass in irregular motion. There were nine young that would evidently have been produced in one or two days. Three were contained in one department and six in the other. They lay embedded in a thick dark-brown mucous substance, which filled and greatly distended the sacs. They possessed more life and motion than I had previously been led to suppose. One of them moved several inches on the table, and survived two hours. I attempted to weigh this uterine fœtus, and as far as I could ascertain with an imperfect pair of scale, it weighed 3 grains.

Although naturalists at the present day could scarcely entertain a doubt that the process of generation in this species did not differ materially from those of the Kangaroo and other Marsupialia, yet I am not aware that the young of the Virginian Opossum had been previously detected in the uterus.

The short period of gestation, the reluctance of many of them in copulating in a state of confinement, unless perfectly domesticated, rendered the discovery one of considerable difficulty. I have moreover found, that during the period of gestation, the females, like those of some other species, particularly the Bear, can seldom be found.

In February, 1847, by offering premiums to servants, I procured from various localities, in three nights,'35 opossums, and there was not a single female in the whole number. As soon, however, as the young were contained in the pouch, I received more females than males.

February 14th, 1848.—Dissected a small female that had been captured six days before. She proved impregnated, but in a much earlier stage of development than the one I examined three days ago. On opening the uterus, I found five on one side and seven on the other. These were nearly the size of a garden pea, and resembled pellucid vesicles. Under a microscope the germinal membranes represented a cellular structure as in other animals. The corpora-lutea corresponded with the number of ova.

The manner in which the act of copulation is effected is no longer a subject of conjecture, although I have not personally observed it. An intelligent coloured man in whose veracity I place great confidence, was requested five years ago to watch this process. He assured me that he had observed the female receiving the embraces of the male while lying on her side. Within the the last few weeks, Dr. Middleton Michel of this city, an intelligent and close observer, who has devoted much time to the investigation of this subject, has observed this process with two female opossums which he has preserved in a domesticated state. He informs me that they received the male whilst lying on their right side.

From various observations I have made for the last three years, I had set down the period of gestation in the opossum at 17 days. I received a female, said by the servant to have been captured in the act of copulation. She produced her young on the seventeenth day. I had, however, placed her with a male that I kept in confinement at the time; but she exhibited such a savage temper towards him, that for the sake of peace, I was compelled to separate them after three days. Dr. Michel, however, informs me that a female in his possession, produced young on the fourteenth day. Although I was at first confident that the true period was 17 days, I think it probable that from the superior advantages Dr. Michel has possessed with his animals in a state of domestication, he may have approximated nearer to the true time than myself.

In the second volume on American Quadrupeds, now in the course of publication, the history of this animal will be treated more in detail.

Further Observations on the Generation of the Opossum.

By the Rev. Dr. BACHMAN.

February 15*th*, 1848.—On the morning of this day I received five female opossums from the country, three of whom I was informed by Col. Hall, (who zealously and successfully interested himself in procuring specimens for my examination), had produced young in the box in which they were confined, a day or two previous to their having been sent. Their several pouches contained eight, nine, and eleven young. There were two, as he informed me, in the state in which I was anxious to obtain them; as they had not yet produced their young. On examination, however, I discovered that one of the two had evidently brought forth amid the jolting consequent on her conveyance from the country. Five young were in the pouch. I observed, on examination, that a sixth was lying at the bottom of the box, and was still living. Supposing it possible that all the young had been excluded, I concluded to sacrifice the mother; and was repaid for an apparent cruelty, exercised very reluctantly, by discovering that the female was still in the act of parturition; a remaining young one was found in the vagina, within half an inch of the external surface. It was moving, head downwards, among a reddish-brown mucous mass, such as had been previously observed in the uterus of a female already referred to. There was not even the rudiment of a placenta. If it had previously existed, it must have been ruptured in the passage of the fœtus, and escaped my most careful search. I was, however, under an impression that I discovered the slight rudiment of an umbilical cord. The nostrils were open; the lungs were filled with air; and, on a subsequent experiment, they were observed to float on the surface of water. On dissecting the uterus it was found flaccid and nearly empty, a slight brown mucus on the sides only being visible.

On the afternoon of the same day I had the remaining female destroyed. On dissecting down to the uterus, I found it greatly distended—full of young, and, as I then supposed, near the period of production. There was a constant but irregular motion in the various parts; and I felt confident that I would now be furnished with the long sought for opportunity of making a thorough investigation of the various particulars that required farther elucidation. I concluded, however, previously, to have a drawing made of the uterus as it presented itself in this state; this consumed the remainder of the evening. As the weather was warm I made a slight incision in the parts, and placed the whole in alcohol. On the following morning, when, with a scientific friend, we entered on the examination, I was greatly disappointed and mortified, to find that the whole had been so much dissolved by the alcohol that we could make no satisfactory examination. The young were lying in broken fragments in the midst of the unctuous and now considerably diminished mass. I now can scarcely suppose that the motion I had observed for an hour while the drawing was in progress could have been any other than a muscular contraction and dilation of the different parts of the uterus itself, and not of the young, which were evidently not sufficiently advanced to have occasioned it.

I would here observe that where the outward integuments of animals are so very tender as those of young opossums a few days previous to their birth, it is advisable to dilute the alcohol to more than half its original strength, as I find the young one that was fully formed, taken from the mother a few moments before birth by the Cæsarean operation referred to, has been preserved in good order in alcohol thus diluted.

In conclusion I will yet add a brief summary of the present state of our knowledge of the natural history of an animal, whose anatomical structure and peculiar habits have led to the adoption of many vulgar errors, and produced several contradictory theories among physiologists. We will thus be enabled to see what important points still remain for farther investigation, and will at the same time be gratified to observe that, although our progress in the investigation of a singularly perplexed subject has been very slow, yet there has been a gradual advance in our knowledge, leading us to the conviction, that in a very few years the history of the opossum will be as correctly and familiarly known to the community at large as that of the hare or squirrel.

1. The interesting group of the Marsupialia has recently been arranged by Owen into five tribes and families, and sixteen genera: these include about seventy known species, to which additions are continually making; the Virginian opossum being, however, the only species known in the United States. The

osteological characters of the latter species have been so accurately described and delineated that little remains to be added in this department.

2. The organs of generation being found perfect and adapted to their peculiar uses—the double uterus to the bifurcated organ of the male—should have in themselves been sufficient to have thrown doubts on the assertions of our early authors—Marcgrave, Pison, Valentyn, Beverly, the Marquis of Chastellux, Pennant, and others—that "the pouch was the matrix of the young opossum, and that the mammæ are, with regard to the young, what stalks are to their fruits."

3. The mode of copulation, although differing from that of the majority of quadrupeds, is far from being the only exception to a general law; our porcupine (Hystrix dorsata) may be cited as another instance. In this respect the actions of animals correspond with their peculiar organization, and the structure of the genital organs, as well as the whole anatomy of the opossum, are in accordance with this habit.

4. The question propounded in 1819, to naturalists, by Geoffroy, "Are the pouched animals born attached to the teats of the mother?" is satisfactorily answered.

5. The period of gestation being between fifteen and seventeen days, is in this respect shorter than that of any other known species (that of the Kangaroo being thirty-eight days), suggests the idea of the probability of some modification of uterine structure, approaching in some respects that of the birds and ovoviviparous reptiles.

6. Although the period of gestation is so short, the young are far more perfectly developed at birth than has been usually supposed. The views of Blumenbach, who likens them to abortions, as well as those of Dr. Barton, (I quote from Griffith as I have not recently seen the original) appear in this particular suprisingly inaccurate. "The Didelphes," he says, "put forth, not fœtuses, but gelatinous bodies; they weigh at their first appearance generally about a grain, some a little more, and seven of them together weighed ten grains." My observations have convinced me that they are far from being merely "gelatinous bodies," but that they are pretty well developed, indeed nearly as much so as the young of the white-footed mouse and several other species of Rodentia. They are covered by one integument—nourished by the mammæ—breathe through nostrils—are remarkably tenacious of life, and are capable of a progressive movement at the moment of their birth. Hence I am not fully satisfied with the accuracy of the terms used by De Blainville and Dr. Barton—when they speak of two sorts of gestation—one uterine and the other mammary. It is admitted that for so large an animal as the adult opossum, the young are not only very small, but feeble, and are for several weeks sustained in a kind of secondary domicil, termed the pouch, where they receive warmth, and that they continue during this period firmly attached to the teats, which they do not relinquish till they are pretty well grown. It will be recollected, however, that there is in several of our animals an approach to this latter peculiarity. The white-footed mouse (Mus leucopus); the Florida rat (Neotoma Floridana), and several species of Bats are known, the two former to travel, and the latter to fly about for one or two weeks, with their young attached to their teats, and that these young are not only blind and naked, but nearly as helpless as those of the opossum. It will be farther recollected that there are several species in

the extensive group of Mammals to which the opossum belongs, that are destitute of the pouch, the young in these cases adhering to the teats like those of the Florida rat, &c., exhibiting an approach to species of a different conformation·

7. The manner in which the young are placed into the pouch and attached to the teats, I have referred to in my observations on the female that brought forth her young in the room where I was sitting, on the 4th of March, 1846, (although I was not at the time aware that she was in the act of parturition). She was reclining in the corner of the cage, a little on one side, with her shoulders somewhat elevated; her body was much doubled, the vulva nearly reaching the pouch, the latter being occasionally opened by her paws. She was busily employed with her nose and mouth licking, as I thought, her pouch, but which I afterwards ascertained was her young. I came to the conclusion that she shoved them into the pouch, and with her nose or tongue moved them to the vicinity of the teats, where, by an instinct of nature, the teat was drawn into the small orifice of the mouth by suction. I observed subsequently that the well-formed young I extracted from the vagina, which I rolled in warm cotton, was instinctively engaged in sucking at the fibres of the cotton, and had succeeded in drawing into its mouth a considerable length of thread. I may here remark that on the 21st of February of the present year a female opossum was sent to me late in the evening. She had been much wounded on being captured, and died in consequence a few days afterwards. On the morning after I received her I perceived in her pouch seven young; they had not been attached and were dead; abortion had taken place, and they had evidently been placed in the pouch by the mother's uncontrollable attachment to her offspring even after they were dead.

8. The opossum is one of the most prolific of our quadrupeds. I consider the early parts of the three months of March, May and July as the periods when they successively bring forth; it is even probable that they breed still more frequently, as I have observed the young during all the spring and summer months. I find in my notes the following memorandum: "May, 1830 In searching for insects, I was removing with my foot some sticks composing the nest of the Florida rat. I was startled on finding my boot unceremoniously and rudely seized by an animal which I soon ascertained was a female opossum. She had in her pouch five very small young, whilst seven others, about the size of full grown rats, were detected peeping from under the rubbish, and were captured."

9. An interesting inquiry remains to be answered. Is the opossum a placental or a non-placental animal? If I am to understand by this term, whether the opossum has or has not a placenta, I can readily answer in the negative. In these intricate matters the naturalist should, if possible, see with his own eyes, and speak at all times as feeling himself firm on his own feet. I have had all the opportunities I could have desired of perfectly satisfying my own mind on this subject, but can only state that in all the examinations I have made I could never find the slightest appearance of a placenta, and I do not believe that one exists.

I am, however, far from being equally satisfied on another point, to which I confess my observations were not directed until it was almost too late to make the necessary investigations. Although I do not believe that a placenta exists, or that there is any attachment of the fœtus to the parietes of the uterus, it does not from hence follow as a natural consequence that there is no allantois. If an animal has a placenta, there is a sure evidence of the pre-existence of an allantois; but there is in many animals, and especially among the smaller species of Marsupialia, a modified structure in these parts; and the allantois, umbilical cord, as well as the omphalo-mesenteric arteries and veins may exist in the absence of a placenta. In the very unsatisfactory examinations I have been enabled to make on this subject, I came to the conclusion that there was some reason to believe that an allantois existed, and that there were some traces of the omphalomesenteric vessels running through the mucous substance in which the young lay imbedded. It is proper, however, to observe, that my friends Prof. Hume and Drs. Harlbeck and Michel, who subsequently examined the well preserved specimen of the 15th, and the imperfect remains of the contents of the other uteri, came to the very opposite conclusion. I nevertheless hazard the conjecture that these appendages may yet be found in the uterus at an advanced stage of pregnancy. This suspicion, however, remains either to be confirmed or refuted by a more favorable opportunity for examination. Owen, in describing, in 1834, the fœtus and membrane of the Kangaroo at apparently the middle period of uterine gestation, found its condition such as obtains in the viper and other ovoviviparous reptiles, there being no trace of the existence of an allantois. In 1837, however (see Magazine of Nat. Hist., p. 481), having received another specimen in a more advanced stage, he found numerous ramifications of the umbilical vessels constituting a true allantois. The umbilical cord extended three lines from the abdominal surface of the fœtus. Having seen and examined that specimen, I may have unconsciously formed a theory which has misled me in conjecturing that I had observed a similar organization in the opossum.

Letter from Middleton Michel, M. D., of Charleston, S. C.

To the Rev. John Bachman, D. D.

DEAR DR.—You will oblige me by adding the few facts which I am able to state, concerning the habits and generation of our Opossums, to your valuable communication, addressed to the Philadelphia Academy of Natural Sciences.

1st. I have first noticed their mode of copulation, which though singular in itself, finds its explanation in the position and structure of the penis. The female, after repeated solicitations on the part of the male, which are conducted as among other animals, finally reclines upon her left side, being drawn into this position by the male; his front legs are employed in securing her, while the hinder ones are made to pass on each side of the loins of the female, over and between her hind legs. The penis, measuring two inches and more, is thus brought into more immediate relation with the sexual organs of the female. Copulation lasted five minutes. The sperm passes along the lateral canals, its only possible course, as the bifurcated organ of intromission is received to some distance into them.

2d. I have further determined, that the period of gestation is not twenty and twenty-two days as has been believed. I placed a female with the male on the 27th of January, and on the 28th, at 7½ o'clock, A. M., I witnessed them engaged in the act. She was left three days with the male, then isolated, and on the 12th of February, fifteen days after the first coitus, had her young, six in number, in the pouch. Admitting that the period may vary from fifteen to seventeen days, the having settled this point I regard of paramount importance in answer to another question to be shortly examined.

3d. The rut begins in January and continues till June, as I have seen young just received into the pouch during these months.

4th. The number of young is from *six* to *thirteen*. I have had a female with *thirteen* in the pouch; never less than *five*.

5th. The size of the young at birth is four lines in length, two in breadth; weight four grains.

6th. The structure of the male and female organs has been well described by *Cooper*, *Tyron*, *De Blainville*, *Home*, and others. But I would remark that there is no communication between the uterine extremity of the lateral tubes (or the sinus, as I would term it,) and the vagina, as figured by Home and others.

7th. This leads me to mention that parturition takes place as follows: the young pass down through the lateral tubes, there being no other exit for them, and immediately after parturition these canals are very much enlarged.

The mode of transmission to the pouch is a part of the process hitherto unknown, which I have recently witnessed as well as the nature of the circumstances would permit. The female stood on her hind legs, and the body being much bent, the young appeared at the vulva; they were licked into the pouch. They were born without any trace of an umbilical cord. The pouch was not interfered with for some time, when her mouth was introduced into it while her front paws held it open; after this manœuvre was completed, the little ones were all found attached to the teats. I would further remark that this attachment is an instinctive act on their part, as it is impossible to conceive of any interference of the mother effecting it. The mouths of the embryons present but an infinitely small opening, compared with the size of the teat, and with the hand it is an almost impossible attempt to attach them.

8th. The ova in the vesicles are larger in proportion than in other mammalia; the vitellus is enveloped by a thin vitelline membrane. The germinal vesicle is, however, in the same position as in other mammals; the transformation in the tubes, where I have met with one, after fecundation, appears the same as in the rabbit. In the uterus, the germinal membrane has the same structure and appearance as in the rabbit. This stage I witnessed, through Dr. Bachman's kindness, as he gave me the uterus to examine.

9th. Whether these animals be placental or non-placental, is a question which I cannot positively decide until I have finished the series of observations proposed, but the inference that they are not placental, is rendered legitimate, first, by the peculiarities in the structure of the brain and other organs, which show their close proximity to the bird; second, by no allantois attached and conveying blood vessels to the chorion; third, by the short period of gestation; for the ova were discovered in the uterus on the ninth day, and the period of gestation being fifteen or sixteen days would render such a structure needless.

The Committee on Dr. Leidy's description of a new fossil genus of Ruminantoid Pachydermata, reported in favor of publication.

On a New Fossil Genus and Species of Ruminantoid Pachydermata: Merycoidodon Culbertsonii.

By Joseph Leidy, M. D.

*Merycoidodon.** This genus is founded upon two fragments handed to me by Dr. Morton, who obtained them for the cabinet of the Academy, from Mr. Culbertson, the same gentleman who lately enriched our collection by the deposit of the cranium of Poëbrotherium, described in the number of the Proceedings for Nov. and Dec., 1847.

---

* μηρυκάζω, rumino; εἶδος, forma; ὀδών, dens.

One of the fragments is a small portion of the upper jaw of the right side, containing the posterior two molar teeth, and attached to a portion of the same kind of matrix, which partially enveloped the cranium of Poëbrotherium. The two teeth are perfect, with the exception that the antero-external demicone of the penultimate molar is broken away. The penultimate molar has four fangs, the internal ones of which are divergent from the external. The last molar was just upon the point of protruding so that the crown only is formed.

The other fragment is a portion two inches long of the right side of the inferior maxilla, and contains the posterior three molars. The internal half of the crown of the antepenultimate molar is destroyed, as is also a small projecting point on the internal surface of the penultimate molar. The last molar is in the same condition as the corresponding superior tooth. The external part of the upper enameled surface of the crown of the antepenultimate molar is worn away from the outside inwardly, as is also the edge of the same part of the crown of the penultimate molar.

The enamel is thin and about as rugose as that of Cervus virginianus.

The molars, like those of Merycopotamus,* have the antero-posterior cleft dividing the primary lobes, forming two bends triangular convex, inwards in the superior teeth, outwards in the inferior teeth ; producing a crown having the ruminant pattern.

The inner demicones of the superior molars are triangular convex. Their inner surface inclines outwards from the base, at an angle of 65 degrees, and is a very little concave in this direction. The outer surface is concave, inclined at an angle of about 50 degrees, and runs into the outer demicones at the depth of from three to three and a half lines from the apex of the latter. The exposed part of their base is surrounded by a projecting ridge, about one-fifth of a line deep on the anterior and posterior sides of the tooth, and perceptible internally merely as a slight rising of the base, excepting opposite the interlobular depression, where a small irregular and rather inconspicuous tubercle exists, apparently formed by the union of the ridge of the two internal demicones at this point, but no ridge passes from this tubercle outwards into the interlobular fissure as in Mercycopotamus.

The inner demicones fold around the external convexities of the external demicones. The antero-external edge of the enamel fold of the postero-internal demicone projects a line or more between the postero-external edge of the antero-internal demicone and the postero-external demicone, causing the latter edge to bend abruptly forwards towards the antero-external demicone.

The points of the exterior demicones project above those of the interior, less in the last than in the penultimate molar. The internal surface is triangular convex, with a little vertical inclination. The external surface is concave from side to side, nearly vertical, and is slightly elevated in a vertical line in the middle.

The postero-external angle of the postero-external demicone of the penultimate molar, forms a strong, rounded, vertical prominence, which in the last molar is considerably more developed, so as to prevent the appearance of an almost distinct conical column.

---

* Vol. 2, pl. 140, Fig. 8.

Opposite the interlobular depression of the last molar, the exterior demicones combine to form a strong and much projecting, triangular, vertical ridge, the base of the triangle corresponding to the base of the crown. A similar ridge, though not quite so prominent, exists at the antero-external angle of the antero-external demicone. These ridges probably also existed in the penultimate molar, which is not capable of being determined from the imperfection of the specimen.

These teeth differ from the molar tooth of the Merycopotamus, figured in Owen's Odontography,* by being much smaller, the ridge along the base of the inner demicones being neither so strong nor rugged, in the projection of the enamel fold on the crown separating the antero-internal, from the postero-external demicone, by the presence of the two strongly prominent external ridges, and the absence or very slight development of the convex ridge at the bottom of the external concavities.

The inferior molars, in general appearance resemble those of Dichobune, Cuv.

The exterior demicones are a little longer and about as broad as the interior superior ones, and their external prismatic surface is not so much inclined. At their base, on the front and back of the teeth, their exists a ridge corresponding in its characters to that of the superior internal demicones. Between the two demicones at their base, exists a triangular tubercle, apparently produced by the union of the basal ridges of the demicones at this point. The supero-internal face is concave, but does not descend so much as the corresponding surface of the supero-internal demicones.

The points of the inner demicones, when compared with the exterior ones, rise higher than the corresponding or exterior demicones of the superior teeth.

Their external surface is compressed triangular or nearly convex, and nearly vertical. Internally they are more oblique, concave from side to side, but elevated into a broad convex ridge in the middle. The posterior angle has the appearance of being slightly twisted inwards, so as to produce a small prominence. Below the posterior prominent angle of the antero-internal demicone, and projecting from the base of the posterior demicone, is a small tubercle that looks as if squeezed in the angle of separation between the demicones.

In the specimen, the posterior molar has but two lobes, which if it be the normal condition, would be a remarkable peculiarity among the ruminantoid Pachydermata. A third lobe might have existed which has been broken off, although the tooth has no appearance of such a loss.

The breadth of the lower jaw, below the penultimate molar, is about equal to that of Cervus virginianus, and internally, just above the base and parallel to it, it is deeply depressed. The species I have named "Culbertsonii," in honor of the family, to whom science is indebted for the preservation of these interesting remains.

Measurements.†

Superior molars :—
  Penultimate:
    Greatest heighth of crown, at exterior demicones, ... 5

---

*Owen's Odontography, vol. 1, p. 566.

†The measurements are taken in English inches and parts of ditto.

Geatest transverse diameter, at base of posterior demicones,	.7
" antero-posterior diameter,	.675
" heighth of internal anterior demicone,	.375
" " " posterior "	.3
Breadth of internal demicones, at base,	.475
Length of external fangs,	.4
" internal,	.35
Posterior:	
Greatest heighth of crown, externally,	.5
" transverse diameter,	.7
" antero-posterior diameter,	.8
Length of internal demicones,	.3
Inferior molars:	
Antepenultimate:	
Greatest heighth of crown, internally,	.375
" transverse diameter,	.5
" antero-posterior diameter,	.6
Penultimate:	
Greatest heighth of crown,	.4
" transverse diameter,	.5
" antero-posterior diameter,	.6
Posterior:	
Greatest heighth of crown,	.433
" transverse diameter,	.5
" antero-posterior diameter,	.65
Breadth of lower jaw below penultimate molar,	1.05

Explanation of the Figures.

All the figures are of the size of nature.

Fig. 1. Represents an external view of the fragment of the upper jaw of the right side, containing the posterior two molar teeth of Merycoidodon Culbertsonii.

Fig. 2. Superior view of the same fragment, as fig. 1.

Fig. 3. External view of the fragment of the lower jaw on the right side, containing the posterior three molar teeth.

Fig. 4. Internal view of the same fragment as fig. 3.

Fig. 5. Superior view of the same fragment as fig. 3.

The Committee on two papers by Dr. Hallowell, entitled "Descriptions of two new species of Onychocephalus," and "Notes of the post mortem appearances of a Cynocephalus papion," reported in favor of publication.*

An amendment to Article IX. Chapter 8, of the By-Laws, altering one of the days of admission of the public from *Saturday* to *Friday*, was adopted.

---

*These papers will appear in the next number of the Proceedings.

Fig. 5.

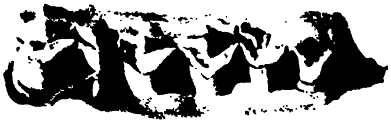


Fig. 4

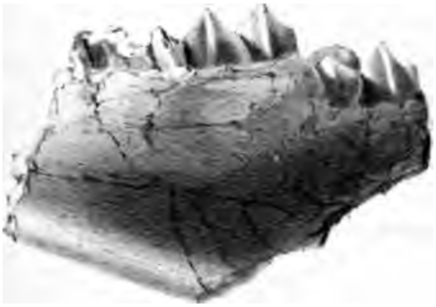


Fig. 2.

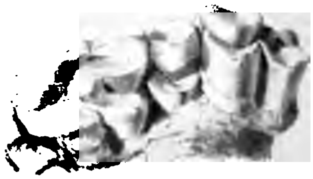


Fig. 3.

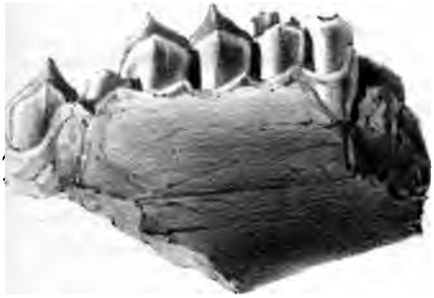
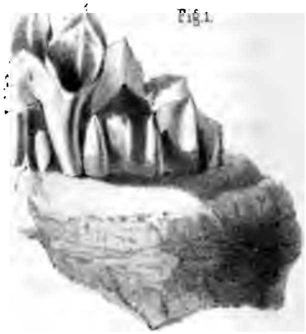


Fig. 1.



MERYCOIDODON CULBERTSONII. Leidy.

From nature & on stone by R. H. Kern.

ELECTION.

Charles D. Meigs, M. D., of Philadelphia, was elected a *Member*, and

Professor Eschricht, of Copenhagen,
Christian Gotfried Ehrenburg, of Berlin,
Prof. J. Frederick Schouw, of Copenhagen,
Col. J. C. Fremont, U. S. A.,
William L. Jones, M. D., of Riceboro, Georgia,

were elected *Correspondents* of the Academy.

DONATIONS TO THE MUSEUM

In March and April, 1848.

March 7th.

Two hundred specimens of American and Foreign Lepidoptera. From Dr. Wilson.

Two crania of Vulpes fulvis, one of Strix nævia, one of Falco ———, and one of Pipelo erythropthalmus. From Dr. Wilson.

Cineras vittata, from the Baltic. From Dr. Griffith.

March 14th.

Several specimens of Copper Ore, from the Bristol Mines, Connecticut. From Mr. T. Fisher.

Specimen in skin of Petaurista taguanoides, from Fort Jackson. From Mr. James Taylor.

Musci and Hepaticæ, from the Andes of Quito, collected by Mr. Wm. Jameson, and presented by him through Seth Swainson, Esq., U. S. Consul at Guayaquil.

The following extensive and valuable collections of Fossils were presented by Dr. T. B. Wilson.

1. Mr. Conrad's collection of *American* Fossils, containing about one thousand species and three thousand specimens, and including the originals of Dr. Morton from the cretaceous formation.

2. A general collection of *British* Fossils, from the Tertiary to the Lias inclusive, and also Fishes from the Old Red Sandstone, containing about two thousand five hundred species, and eight thousand specimens. This collection embraces a part of the selected specimens from the Cabinet of the late Miss Benett, of England, all of which have not yet been received.

3. A collection of *Italian* Fossils, from the Tertiary of Piedmont, containing about six hundred species and two thousand specimens.

4. A collection of *German* Fossils from the Tertiary, Solenhofen Slate, Muschelkalk, Zechstein, Kupferscheifer, Lias and Silurian, comprising about five hundred species and six hundred and fifty specimens.

March 21st.

Mounted Skeleton of Ursus Americanus, (young). From Mr. L. J. Germain.

Mounted Skeleton of Procyon lotor. From Mr. L. J. Germain and Dr. Watson.

Skeleton of Cynocephalus papion, (young). From Dr. Watson.

Skeleton of Hapale œdipus ornatus. From Dr. Hallowell.

Fifteen Peruvian crania from Pisco, near Lima, and three Peruvian vases, collected by Mr. William A. Foster, and deposited by Dr. Morton.

Specimen of Scarabæus tityus, from Cape May. From Dr. Townsend.

April 4th.

The second portion of the *Rivoli collection* of Birds, containing two thousand five hundred and eighty-four specimens. Deposited by Dr. T. B. Wilson.

Mounted Skeleton of Vulpes fulvis. From Mr. Ashmead.

Two fragments of the jaws of a new fossil genus of Mammalia, (*Merycoidodon Culbertsonii*, Leidy,) found near the "Black Hills," Western Missouri. Deposited by Mr. Joseph Culbertson.

Fifteen additional Peruvian crania from Pisco, and one Peruvian vase. Deposited by Dr. Morton.

Original specimen of Picus Lecontei. Deposited by Dr. William L. Jones, of Riceboro, Georgia.

April 18th.

Two hundred and seventy-eight specimens from the Crag, Chalk, Lias, and Upper Silurian formations of England, and ten additional specimens from the Benett collection. Deposited by Dr. Wilson.

DONATIONS TO THE LIBRARY

IN MARCH AND APRIL, 1848.

Fragmens d'histoire naturelle systématique et physiologique sur les Musairaignes: par G. L. Duvernoy. 4to. From Dr. Morton.

Organon der Weltgeschichte von Dr. J. H. Pulte. 8vo. From the Author.

Literary Record and Journal of the Linnean Association of Pennsylvania College, Vol. 4. No. 5. From the Association.

The Journal of the Indian Archipelago and Eastern Asia. Nos. 4 and 5. From the Editor.

Caloric, origin, matter and law of the Universe. By Trastour. From the Author.

Metamorphosis et historia Naturalis Insectorum. Auctore Joanne Goedartio. 2 vols. 12mo. From Dr. Leidy.

Memoir on the reproduction of the Opossum. By Charles D. Meigs, M. D. From the Author.

System der Urweltleichen Konchylien: Von Heinrich G. Brown. Folio. From Dr. Griffith.

Dial of the Seasons, or a portraiture of Nature. By Thomas Fisher. 8vo. From the Author.

The following were deposited by Dr. Wilson:

Nouveaux élémens de Botanique et de Physiologie végétale: par Achille Richard. 4th edition. 8vo.

The Entomology of Australia. By George Robert Gray. 4to. Part 1. Genus Phasma.

The natural history of many Zoophytes, collected by the late John Ellis, Esq., and arranged and described by the late Daniel Solander, M. D. 4to.

Die in Bernstein befind lichen organischen reste der Vorwelt von Dr. George Carl Berendt. Part 1. Folio.

Fauna Caspio-Caucasia, nonnullis observationibus novis illustravit Edwardus Eichwald. 4to.

Lectures on Physiology, Zoology, and the natural history of Man. By William Laurence. 8vo.

Essai historique sur les Races Anciennes et Modernes de l'Afrique Septentrionale: par Pascall Duprat. 8vo.

An Introduction to the study of Natural History, in a series of Lectures, delivered in New York by Professor Agassiz. 8vo.

Travels in North America, in the years 1841–2. By Charles Lyell, Esq. F. R. S. 2 vols. 8vo.

Rapports du Physique et du Moral de l'Homme: par P. J. G. Cabanis. 2 vols. 8vo.

Synopsis of the species of Insects belonging to the family of Phasmidæ. By George Robert Gray. 8vo.

Philosophie Zoologique, &c., par J. B. P. A. Lamarck. 2 vols. 8vo.

The Natural History of Man. By James Cowles Prichard, M. D., F. R. S. 2d edition. 8vo.

Ethnographical Maps to the same work. By J. C. Prichard, M. D. Folio.

Researches into the physical history of Mankind. By J. C. Prichard, M. D. 5 vols. 8 vo.

Voyage a la Nouvelle Guinée: par M. Sonnerat. 4to.

Dissertation sur les variétés naturélles qui caractériscent la physionomie des Hommes des divers climats et des différens ages. Ouvrage posthume de M. Pierre Camper. Traduit du Hollandois par H. J. Jansen. 4to.

A history of British forest trees, indigenous and introduced. By Prideaux John Selby, F. L. S. 8vo.

A catalogue of plants growing in the vicinity of Berwick upon Tweed. By J. V. Thompson, Esq. 8vo.

Werner's nomenclature of colors, with additions, &c. By Patrick Syme. 8vo.

A history of British Quadrupeds, including the Cetacea. By Thomas Bell, F. R. S. 8vo.

Discours sur les Revolutions de la surface du Globe; par M. le Baron Cuvier. 8vo.

Les Peuples de le Russie: 2 vols. Folio.

Journal of researches made in Natural History during the voyage of the H.M.S. Beagle. By Charles Darwin, F. R. S. 8vo.

Treatise on insects injurious to gardeners, foresters, and farmers. By Vincent Kœller. Translated from the German by J. and M. Loudon. 8vo.

Taxidermy: with the biography of Zoologists and notices of their works. By William Swainson, F. R. S. 8vo.

Vestiges of the Natural History of Creation. 2d edition. 8vo.

The principles of Descriptive and Physiological Botany. By the Rev. J. S. Henslow. 8vo.

Vegetable substances used for the food of Man. 12mo.

Manual of the Practical Naturalist. 12mo.

Memorials of John Ray; edited by Edwin Lankester, M. D. 8vo.

The Anatomy of the Brain, with a general view of the Nervous System. By J. G. Spurzheim, M. D. Translated from the French, by R. Willis. 8vo.

Animal and Vegetable Physiology considered with reference to Natural Theology. By Peter Mark Roget, M. D. (Fifth Bridgewater Treatise,) 2 vols. 8vo.

The second, third, and fourth Bridgewater Treatise. By John Kidd, M. D., the Rev. Wm. Whewell, and Sir Charles Bell. In one Vol. 8vo.

The sixth Bridgewater Treatise. By the Rev. Wm. Buckland, D. D. In two vols. 8vo.

The ninth Bridgewater Treatise. By Charles Babbage, Esq. 8vo.

An introduction to Entomology. By Wm. Kirby and Wm. Spence. 4th edition. 4 vols. 8vo.

Southern Ichthyology; or a description of the Fishes of South Carolina, Georgia and Florida. By John Edwards Holbrook, M. D. No. 2. 4to.

A monograph on recent and fossil Crinoidea. By Thomas Austin, Esq., and T. Austin, Jr. 4to. Nos. 1—6.

Illustrations of British Mycology. By Mrs. T. J. Hussey. 4to. Parts 8 and 10.

Illustrations of Indian Ornithology. By T. C. Jerdon, Esq. Parts 1, 2, and 3. 4to.

Noveau manuel de Botanique; par MM. Girardin et Jules Juillet. 12mo.

The Cabinet Cyclopædia: conducted by the Rev. Dionysius Lardner. Fishes, Amphibia, and Reptiles, 2 vols.; Animals in Menageries, 1 vol.; Classification of Quadrupeds, 1 vol.; Geography and Classification of Animals, 1 vol.; Study of Natural History, 1 vol.; Habits and Instincts of Animals, 1 vol.; Malacology, 1 vol.; History and Natural arrangement of Insects, 1 vol.

Geatest transverse diameter, at base of posterior demicones,	.7
" antero-posterior diameter,	.675
" heighth of internal anterior demicone,	.375
" " " posterior "	.3
Breadth of internal demicones, at base,	.475
Length of external fangs,	.4
" internal,	.35
Posterior:	
Greatest heighth of crown, externally,	.5
" transverse diameter,	.7
" antero-posterior diameter,	.8
Length of internal demicones,	.3
Inferior molars:	
Antepenultimate:	
Greatest heighth of crown, internally,	.375
" transverse diameter,	.5
" antero-posterior diameter,	.6
Penultimate:	
Greatest heighth of crown,	.4
" transverse diameter,	.5
" antero-posterior diameter,	.6
Posterior:	
Greatest heighth of crown,	.433
" transverse diameter,	.5
" antero-posterior diameter,	.65
Breadth of lower jaw below penultimate molar,	1.05

Explanation of the Figures.

All the figures are of the size of nature.

Fig. 1. Represents an external view of the fragment of the upper jaw of the right side, containing the posterior two molar teeth of Merycoidodon Culbertsonii.

Fig. 2. Superior view of the same fragment, as fig. 1.

Fig. 3. External view of the fragment of the lower jaw on the right side, containing the posterior three molar teeth.

Fig. 4. Internal view of the same fragment as fig. 3.

Fig. 5. Superior view of the same fragment as fig. 3.

The Committee on two papers by Dr. Hallowell, entitled "Descriptions of two new species of Onychocephalus," and "Notes of the post mortem appearances of a Cynocephalus papion," reported in favor of publication.*

An amendment to Article IX. Chapter 8, of the By-Laws, altering one of the days of admission of the public from *Saturday* to *Friday*, was adopted.

---

*These papers will appear in the next number of the Proceedings.

Fig. 5

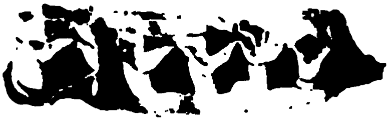


Fig. 4

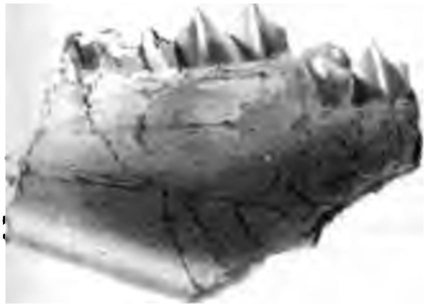


Fig. 2

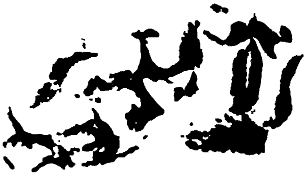


Fig. 3

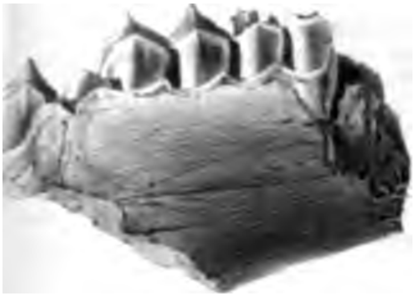
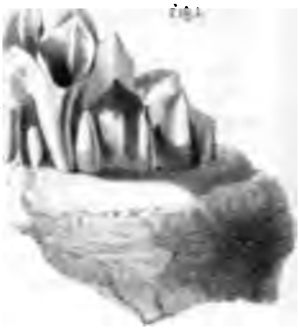


Fig. 1



MERYCOIDODON CULBERTSONII Leidy

From nature & on stone by E H Kern

ELECTION.

Charles D. Meigs, M. D., of Philadelphia, was elected a *Member*, and

Professor Eschricht, of Copenhagen,
Christian Gotfried Ehrenburg, of Berlin,
Prof. J. Frederick Schouw, of Copenhagen,
Col. J. C. Fremont, U. S. A.,
William L. Jones, M. D., of Riceboro, Georgia,
were elected *Correspondents* of the Academy.

DONATIONS TO THE MUSEUM

IN MARCH AND APRIL, 1848.

March 7th.

Two hundred specimens of American and Foreign Lepidoptera. From Dr. Wilson.

Two crania of Vulpes fulvis, one of Strix nævia, one of Falco ———, and one of Pipelo erythropthalmus. From Dr. Wilson.

Cineras vittata, from the Baltic. From Dr. Griffith.

March 14th.

Several specimens of Copper Ore, from the Bristol Mines, Connecticut. From Mr. T. Fisher.

Specimen in skin of Petaurista taguanoides, from Fort Jackson. From Mr. James Taylor.

Musci and Hepaticæ, from the Andes of Quito, collected by Mr. Wm. Jameson, and presented by him through Seth Swainson, Esq., U. S. Consul at Guayaquil.

The following extensive and valuable collections of Fossils were presented by Dr. T. B. Wilson.

1. Mr. Conrad's collection of *American* Fossils, containing about one thousand species and three thousand specimens, and including the originals of Dr. Morton from the cretaceous formation.

2. A general collection of *British* Fossils, from the Tertiary to the Lias inclusive, and also Fishes from the Old Red Sandstone, containing about two thousand five hundred species, and eight thousand specimens. This collection embraces a part of the selected specimens from the Cabinet of the late Miss Benett, of England, all of which have not yet been received.

3. A collection of *Italian* Fossils, from the Tertiary of Piedmont, containing about six hundred species and two thousand specimens.

4. A collection of *German* Fossils from the Tertiary, Solenhofen Slate, Muschelkalk, Zechstein, Kupferscheifer, Lias and Silurian, comprising about five hundred species and six hundred and fifty specimens.

March 21st.

Mounted Skeleton of Ursus Americanus, (young). From Mr. L. J. Germain.

Mounted Skeleton of Procyon lotor. From Mr. L. J. Germain and Dr. Watson.

Skeleton of Cynocephalus papion, (young). From Dr. Watson.

Skeleton of Hapale œdipus ornatus. From Dr. Hallowell.

Fifteen Peruvian crania from Pisco, near Lima, and three Peruvian vases, collected by Mr. William A. Foster, and deposited by Dr. Morton.

Specimen of Scarabæus tityus, from Cape May. From Dr. Townsend.

May 2d, 1848.

Vice President MORTON in the Chair.

A letter was read from the Hon. George Bancroft, dated U. S. Legation, London, 14th April, 1848, stating that he had received from the Hon. East India Co. a proposal to present to the Academy a series of casts of India Fossils in the Company's possession, and requesting instructions on the subject.

Dr. Dickeson communicated a paper for publication in the Journal, entitled "Microscopic examination of the development of the fœtus of the *Succinia amphibia*," which was referred to Drs. Griffith, Hallowell, and C. D. Meigs as a Committee.

Dr. Morton read the following communication from R. W. Gibbes, M. D., of Charleston, S. C.

"In June, 1845, I submitted to the Academy, an account of a non-descript fossil from the *Eocene* of South Carolina. I expressed the opinion that it was generically different from any previously published specimens, and called it DORUDON *serratus*. Casts of the teeth were forwarded to PROF. OWEN, by my friend Dr. S. G. Morton. In the "Proceedings" of the Academy of Feb. 1846, a notice appeared that a letter had been received from Prof. Owen, of London, dated November 11th, 1845, in reference to the fossil genus *Dorudon*. He considered it to be the same as his genus Zeuglodon (BASILOSAURUS, Harlan,) to which also he referred the very extensive series of bones collected by Dr. Koch, in Alabama, then on exhibition in London.

Prof. Owen's letter was kindly forwarded to me by Dr. Morton, who wrote me that he considered Prof. Owen's authority as decisive, and that I must yield my genus, requesting me at the same time to prepare for the Academy's Journal, then about to be resumed, a paper on the present knowledge of ZEUGLODON. In deference to such high authority, I yielded the genus, though in my reply I expressed the opinion that I still thought the character different. In my paper published in the first number of the Journal, I described *Dorudon* as a second species of *Zeuglodon*, giving Prof. Owen's letter, and stating the characters upon which I had made its generic distinction, expressing the opinion that what I had considered a very important character, "should not be set aside."

On a visit to Charleston, in December last by Prof. Agassiz, I took the opportunity of submitting the specimens (some of which he had not seen) again to his critical inspection, and the result was that he adopts all the characters upon which I had based the genus, and upon his authority I respectfully reclaim the genus DORUDON.

The following letter he kindly sent me in relation to the specimens, as well as to his discovery among my fossils of a new genus, which he names SAUROCETUS."[*]

---

[*] See the letter referred to, at page 4, No. 1, Vol. 4 of these Proceedings.

May 9th, 1848.

Vice President Morton in the Chair.

Dr. Pickering called the attention of the Society to the fact that in all the estimates relating to the length of the year, no reference had been made to the time taken for light to reach us from the sun, about eight minutes and a half. He supposed that if that estimate was taken into the calculations, a slight difference would be found in the results.

Dr. Bridges remarked that the same estimate was taken at the commencement of the calculation as at the end—that the relative position of the sun to the earth was the same at both times; and he asked if the consequence was not, that the length of time between each position so estimated would be precisely the same as if the allowance spoken of by Dr. Pickering was made?

The effect of making such allowance would only be to add eight minutes and a half to each end, which would, of course, leave the difference between such ends the same as before.

Dr. Meigs offered some remarks on the mode of copulation in the Opossum, which he felt satisfied was performed *more canino*, as observed by Dr. Ellerslie Wallace of this city; and that the statements contained in a recent communication to the Academy on this subject, by Drs. Bachman and Michel, that the connection took place in a lateral position, were erroneous.

May 16th, 1848.

Dr. Bridges in the Chair.

Dr. Gambel presented and read a communication from Major McCall, entitled "Some Notes on Mexican Birds heretofore not fully described;" which was referred to a Committee consisting of Dr. Gambel, Mr. Harris, and Dr. Wilson.

May 23d, 1848.

Mr. Vaux in the Chair.

Dr. Bridges presented a paper by T. A. Conrad, being "Additions" to his "Observations on the Eocene formation and descriptions of one hundred and five new fossils of that period, from the vicinity of Vicksburg, Mississippi, with an appendix," read on the 12th October, 1847, intended to be embodied with that communication, and for publication in the Journal.

Referred to the former Committee, Dr. Griffith being substituted for Dr. Leidy, absent.

May 30th, 1848.

Vice President Morton in the Chair.

(The following papers were reported for publication in the last No. but unavoidably deferred.)

Description of two new species of Onychocephalus, from the Western Coast of Africa.

By Edward Hallowell, M. D.

Onychocephalus. Dumeril and Bibron.

Generic Characters.—Head provided with plates: depressed, terminating in front in a thin or cutting edge. Rostral plate folded under the snout, and expanding as a disk upon the head of variable form. An anterior frontal, a frontal properly called, a pair of supra-oculars, a pair of parietals, an inter-parietal, a pair of nasals, a pair of fronto-nasals, a pair of preoculars, a pair of oculars. Nostrils hemidiscoidal, opening inferiorly between the nasal and the fronto-nasal. Eyes lateral, distinct.

Onychocephalus Liberiensis. (See Plate, fig. 1 and 2.)

Specific Characters.—Length of tail equal to transverse diameter of head taken at its middle; tail incurvated, conical, terminating in a spine; the upper portion of the rostral plate very convex, quadrilateral, its cutting edge slightly arched, not extending across the snout; colour above blackish variegated with yellow; under surface yellow, with black spots upon the sides.

Description.—Head rather small, wedge shaped above, rounded anteriorly; the rostral plate is large, convex superiorly, presenting four sides at its upper surface; of these the posterior is rounded where it lies in contact with the anterior frontal; the lateral margins are slightly curved, and are in contact with the fronto nasal; the anterior margin forms a projecting convex edge where it is continuous with the under surface of the rostral which is four-sided; the lateral margins of this under portion of the rostral are concave, so as to receive the nasal plates which lie along their exterior border; the inferior margin is the most narrow, its middle portion about one-third of it) projecting backward, and forming part of the margin of the upper lip; the nasal plate is long and narrow, broadest near the middle, being somewhat triangular in shape, the apex presenting forward; the nostrils are elongated narrow slits, looking outward and backward, and are placed in the fronto-nasal suture, formed by the juxtaposition of the nasal and fronto-nasal plates; the fronto-nasal are narrow and oblong, much broader below; anteriorly they lie in contact with the rostral, presenting a slightly undulating line at their junction; the posterior margin is deeply incurvated except toward its superior extremity; it lies in contact with the preocular which is received into the hollow formed by its posterior margin; the preocular has the form of an oval disk with a superior and inferior extremity, which are pointed; the ocular plate, which is immediately behind it, is very large; its posterior margin is convex, the anterior concave; the eye is placed in the angle formed by the junction of the preocular, and the supraocular; the latter is a narrow, oblong plate, with a rounded posterior margin; the anterior frontal is a large plate immediately in contact with the rostral, measuring two lines in its transverse direction in the specimen examined; its posterior margin is rounded; the frontal is a very small plate compared with the anterior frontal, also with a rounded posterior margin: it is in contact in front with the anterior frontal, and with the preocular; immediately behind it is the inter-parietal which is less extended in the tranverse direction than the frontal, and its posterior border is much less convex than that of the former plate, and of the scale behind it; the inter-parietal are placed immediately behind the supraocular and the posterior frontal, and are in contact at their internal margin with the frontal, and externally with the ocular; the supra-labials, four narrow, elongated plates, margin each side of the upper lip; that nearest the angle of the mouth is the longest; the eyes are small, but distinct, placed upon the side of the head near the superior extremity of the preocular; scales upon the chin, neck and throat small, increasing in size upon the body and tail, where they are of nearly uniform size; these scales are rounded posteriorly, more extended transversely than in length. There are 28 longitudinal and 369 transverse rows upon the body, and 11 rows upon the tail.

Coloration.—Above brownish, approaching to black, clouded with yellow; under surface yellow for the most part, presenting a few spots of black, chiefly upon the sides.

Dimensions.—Entire length 2 feet 4 lines: length of head 5 lines; greatest breadth 4 lines; length of tail 5 lines; greatest circumference of body 2 inches, 9 lines.

Habitat.—Liberia, Western Coast of Africa. A specimen in the Museum of the Academy.

Habits.—Dr. Savage informs me that this animal inhabits the domicils of the "white ant" (Termes bellicosus of Smeathman,) which probably constitutes its food, and hence has received the name of *Nyonk-re-teai*, literally the *white ant snake.* (See Proceed. for April, 1848, p. 37.) Its tenacity of life is very remarkable.

Onychocephalus nigro-lineatus, (See Plate, fig. 3.)

Specific Characters.—Tail short, of same length as head measured transversely; rostral plate four-sided, longer than broad, rounded posteriorly, the sides slightly convex; nostrils in the fronto-nasal suture; body cylindrical, slender, presenting numerous lines of black upon a ground of silvery grey.

Description.—Head small, depressed, convex in front, rostral plate more extended in the longitudinal direction than transversely, its sides slightly convex, rounded posteriorly; the under part of the rostral is urceolate in form, having a small projection at its posterior extremity; it is somewhat excavated laterally, passing backward between the nasal plates; it presents a well defined edge, at the line of demarcation between its superior portion, extending across it; the nasal are narrow, oblong plates, placed between the fronto-nasal, and the rostral at its inferior part, in contact above with the fronto-nasal; the fronto-nasal are situated above between the rostral and the preocular; they are much more narrow superiorly than at their inferior portion, where they are in contact with the nasal; the nostril, the greater part of which is in the fronto-nasal, occupies the fronto-nasal suture; the anterior frontal is a well defined plate lying immediately posterior to the rostral, and in contact also in front with the fronto-nasal plates, this portion being excavated to receive the corresponding portion of the latter; it is convex upon its posterior border, where it is in contact with the posterior frontal and the supraocular, the latter being exterior to it, and also to the fronto-nasal; the preocular is triangular in form, its widest part being downward, lying in front of the ocular and in contact with the supraocular; the eye, which is small, but distinct, is placed in the angle formed by those two plates; the ocular is large, convex upon its posterior border; it is in contact above where it forms an acute angle, with the inter-parietal superiorly with the supra-ocular, anteriorly with the preocular, and inferiorly with the superior labials; the frontal is much smaller than the anterior frontal; it has immediately behind it the inter-parietal, and upon the external aspect of its posterior border the parietal; the inter-parietal is a small plate resembling the frontal in form, but smaller; the parietals are more extended in the transverse direction than longitudinally; in front they touch the ocular and supraocular, latero-externally the frontal, and posteriorly the inter-parietal; four small quadrangular plates margin the upper lip on each side; the eyes are latero-superior placed as above mentioned; the body is slender, of nearly uniform size, somewhat thicker near the middle, covered with scales which are broader than they are long, presenting a rounder margin posteriorly, somewhat smaller near the head than upon other parts of the body; of these scales there are 29 longitudinal, and 314 transverse rows; there are 16 rows upon the tail; the tail terminates in a pointed spine.

Coloration.—(From a specimen in spirits.) The entire under surface of the animal is yellow, without spots: the back presents 10 narrow black lines, extending from the head to the extremity of the tail; of these the two exterior are less distinct than the rest; the three central ones become broader toward the tail; the intervening portion is white or silver grey.

Dimensions.—Length of head 2 lines; greatest breadth transversely 2½ lines; length of tail 2 lines; length of body 8 inches 2 lines, (Fr.;) greatest circumference 7 lines.

Habitat.—Liberia, West Coast of Africa. Specimen in the Museum of the Academy.

General Observations.—The reptiles above described, belong to the first section of the Ophidians, described by Dumeril and Bibron; viz., the Scolecophidians,[*] or vermiform non-venomous serpents. There can be no doubt, we think, that they are new. But three species of the genus Onychocephalus are described by them in their "Erpétologie générale, ou Histoire Naturelle complete des reptiles," which contains descriptions of all the species of reptiles known; they are the Onychocephalus Delalandii, multilineatus, and unilineatus. The first is figured in the work of Dr. Andrew Smith, upon the Zoology of Southern Africa, and does not bear the least resemblance to either of them, differing from both in size and in the relative proportions of the head and tail, and in its coloration, being of an uniform brown color, both upon its upper and under surface. In multilineatus, the tail is double in length the breadth of the head, and the body presents a series of white lines upon a ground of silvery grey. In unilineatus, a single black line passes along the median line of the back, which is of an olive-brown color.

---

[*] From Σκωληξ, ηκος, vermis, lumbricus, et οφις, serpens.

Notes of the post mortem appearances of a Cynocephalus Papion, which died at the Menagerie in Philadelphia.

By Edward Hallowell, M. D.

The animal is young, measuring about fourteen inches in length.

Head.—Brain not examined.

Thorax.—The upper lobes of the right lung are firmly adherent to the pleura; the whole of this portion of the lung is infiltrated with tubercular matter, firm to the touch, and having a white caseiform appearance: the entire mass measures three inches in length, by two in breadth, French measure; the lowest lobe of this lung is of a brick-dust red colour; presenting numerous tubercles immediately beneath the pleura, varying in size from that of a grain of sand to two lines and a half; the two lobes of the opposite lung are slightly adherent, and studded with tubercles, the largest of which measures five lines, in its greatest extent; the general colour of this lung is reddish-brown. The tubercular infiltration above mentioned occupies the whole of the upper lobes of the right lung which have a uniformly dull white colour throughout, and are resisting to the touch; the lowest lobe is partially hepatized, containing a number of tubercles, most of which are observed immediately beneath the pleura; the base of the right lung is partially adherent to the diaphragm. There are two distinct lobes to the left lung, the upper presenting a slight fissure upon its anterior border; the tissue of both is imperfectly crepitant, containing numerous tubercles deposited near the surface of the lung beneath the pleura; the largest of these measures four lines in diameter; the lining membrane of the œsophagus is pale, having a slight rosy tint and appears healthy; the mucous membrane of the trachea and bronchi is pale; the bronchial glands are tuberculous, but not remarkably enlarged. *Heart*—The two surfaces of the pericardium are adherent throughout, their separation requiring some effort; the external surface of the heart is covered in nearly its whole extent with a thin layer of false membrane of a slightly yellow colour, giving it an appearance of roughness; the general colour of the pericardium is pale with a tinge of redness; upon the surface of the heart, imbedded in its tissue, immediately beneath the pericardium are several small tubercles, having the same aspect as those of similar dimensions found in other organs; the ventricles are empty containing no coagula.

Abdomen.—The liver is divided into four lobes, one of which presents two small subdivisions, it is of a brownish red colour; about a dozen scattered tubercles, the largest having the size of millet seed are observed in its subperitoneal tissue; it measures four inches transversely, by two inches four lines in its longitudinal diameter, and fourteen lines in depth; its tissue when cut into presents nothing remarkable; the *gall-bladder* is moderately distended with bile of a brown colour and almost fluid consistence. *Spleen.*—The spleen measures two inches en lines in length and fifteen lines in its greatest breadth; it presents upon its convex surface numerous elevations, caused by the deposition of tuberculous matter within its tissue, giving it a highly bosselated appearance, resembling in some degree the cancerous deposits observed in the human liver: the largest of these measures seven lines in diameter, and is elevated about three lines above the surface of the spleen; the tuberculous deposite resembles in colour that of the lung, and appears to be composed of numerous agglomerated granules; ten of these large masses may be counted upon its surface; the general colour of the spleen is brownish-red. The *stomach* measures three and a half inches transversely, by two inches four lines in its small diameter, when moderately distended; the fibres of its muscular coat are seen very distinctly through the peritoneum; it is quite pale externally, and no tubercular deposites are observed upon it; it contains a large quantity of pultaceous matter resembling thin gruel mingled with portions of a bright yellow colour; the mucous membrane is pale, presenting, however, a slate coloured tinge, which is most marked at its pyloric portion, where it is much softened; the mucous follicles are not apparent. The *large intestine* contains a considerable quantity of fœcal matter, of a *bright orange colour* throughout; the lining membrane is pale; the small intestine measures seven feet, eight and a half inches in length; the large intestine measures ten feet, three and a half inches in extent, exclusive of the cæcum, which is two and a half inches in length: there is no appendicula vermiformis: the mucous membrane of the large intestine is much corrugated, but pale and apparently healthy. The mucous follicles are quite distinct when the intestine is held up to the light; there are no valvulæ conniventes in the small intestine, nor are any glands of Peyer to be seen; the solitary glands of the small intestine also, are not apparent; the mucous lining of the small intestine is quite pale throughout, and no tubercles or ulcerations are observed in any part of it, or of the large intestine; it contains a quantity of brownish looking matter. The general appearance of the large intestine, viewed externally, is pale, with a slight rosy tint, in portions mingled with yellow, the latter colour being that of its contents; no tubercles are observed in the subperitoneal tissue of either the small or large intestine; several of the *mesenteric glands* are enlarged, the largest being six lines in length, by five in breadth. The *kidneys*, when cut into, present nothing remarkable; no tubercles are observed upon their surface; the *pancreas* is a slender organ, measuring four inches (Fr.) transversely, by half an inch in breadth, of a brownish colour, throughout presenting no tubercles; *bladder* pale.

The Committee on the following communication by Major McCall, reported in favor of publication in the Proceedings.

Some Notes on Mexican Birds, heretofore not fully described.

By George A. McCall, U. S. A.

Orpheus *curvirostris*,* Swainson.

Length 10 inches, 5 lines. The bill is curved and rounded on the ridge, the upper mandible slightly projecting; measured on the ridge it is 1 in. 2 l.; the commissure 1 in. 5 l., its colour dusky. Irides bright carmine, of conspicuous lustre; indeed, the eye is a striking feature of this bird. Tarsus rather robust, and 1 in. 5 l. in length; middle toe and nail 1 in. 3 l.

General colour above, light hair-brown, fading to an ash-colour about the head, while towards the tail it deepens to chesnut. The feathers of the back are loose-webbed; and all the feathers at base are slate-colour. Chin, throat, breast belly and vent, whitish; the breast obscurely mottled with light brown. Primaries dusky, edged with white on the outer vanes; greater and lesser wing coverts hair-brown, also slightly tipped with whitish. Lower tail-coverts hair-brown, broadly edged and tipped with whitish. Tail of twelve feathers, chesnut; the two middle ones loose-webbed, the three exterior tipped with white.

---

*Called by Mexican peasants "Ouitacoche."

There is little difference between the sexes; the female is perhaps a trifle less in size, and its general marking are more obscure.

O. *curvirostris* is rather common about Matamoras, (Mexico.) The song of the male is a clear warble, not unlike the native notes of the mocking bird, but he has neither the imitative powers nor the volume of voice of the latter. On the Rio Grande this bird nested in the hedge rows near the farm houses, and was constantly seen perched upon their roofs, singing with much volubility and all the familiarity of the house-wren.

COLUMBA *leucoptera*, Linn.

C. *Trudeauii, or Texan Turtle Dove*, Audubon.

This very graceful bird—one specimen of which only Audubon mentions as having been received or seen by him—was exceedingly abundant at Matamoras, in May and June, (1846,) large flocks daily feeding in our camp, and with remarkable confidence approaching quite near the tents. But although common in Mexico, I have some doubts as to the propriety of its being denominated a *Texan Dove;* for I never saw it in Eastern Texas, neither did I while on an extensive hunting excursion, which embraced the country along the Neuces River for seventy miles above Corpus Christi, see a single individual of this species, although game of every description was most abundant. Nor did I see one on the whole route from the Neuces to the Rio Grande, until we crossed the latter river *into* Mexico. Mr. Audubon's specimen was, therefore, possibly but a straggler from the neighboring Republic.

About the last of June they disappeared from the vicinity of Matamoras, and passed probably to the interior. In January following I shot a few stragglers, on small streams, near the *Sierra Madre.*

For the table, this bird is far superior to C. *Carolinensis*, the breast being larger and fuller, and the meat of quite a delicate flavor. And in its style of flight it resembles C. *Ænas* more than C. *Carolinensis.*

The female differs but little from the male, except that the metallic reflections on the neck, &c. &c. are less vivid

---

The Committee to whom was referred Mr. Conrad's "Additional descriptions of Tertiary fossils of the United States," reported in favor of publication in the Journal.

ELECTION.

Edward Roberts, Esq., of Philadelphia, was elected a *Member*, and Frederick Tiedmann, M. D., of Heidelburg, a *Correspondent* of the Academy.

June 6th, 1848.

Vice President MORTON in the Chair.

Letters were read from Prof. J. Sturm, of Nuremburg, dated March 25, 1848, and from Dr. Wm. L. Jones, of Georgia, dated 29th May, 1848, severally acknowledging the receipt of their notices of election as Correspondents.

A letter was read from A. H. Bowman, Esq., dated Fort Johnson, South Carolina, in relation to exchanges with the Academy of coast shells from that vicinity.

A communication was read from Dr. R. W. Gibbes, of Columbia, S. C., entitled "Monograph of the Fossil Squalidæ of the United States," and intended for publication in the Journal. Referred to a Committee, consisting of Drs. Gambel and Morton, and Mr. Conrad.

June 20th, 1848.

Vice President MORTON in the Chair.

Mr. Cassin read a paper, describing new species of the genera Vidua, Euplectus, Pyrenestes and Pitylus. Referred to Dr. Gambel, Dr. Townsend and Mr. Harris.

Mr. Cassin also read a communication on the probable identity of Pica Nuttallii with the P. Hudsonica. Referred to the same Committee.

On leave granted, a report from the Committee on Dr. R. W. Gibbes' paper, on the Fossil Squalidæ of the United States, was read and adopted, recommending the same for publication in the next No. of the Journal.

A circular was read from the "Society for the development of the Mineral resources of the United States," announcing its recent formation in Philadelphia, and stating its objects, and requesting the co-operation of the Academy in the same.

June 27th, 1848.

Vice President MORTON in the Chair.

The Committee on the following paper by Mr. Cassin, reported in favor of publication.

Descriptions of new species of Birds of the genera Vidua, Briss.; Euplectus, Sw.; Pyrenestes, Sw.; and Pitylus, Cuv.; specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia.

By JOHN CASSIN.

VIDUA *albonotata*, *nobis*.

Shoulders yellow.

Primaries white at their bases, and for about one-third of their length.

Greater wing coverts also tipped with white, which, with that portion of the primaries of the same colour, forms a conspicuous white spot on the wing.

Lesser wing coverts tipped with brown.

All other parts of the plumage glossy black.

Bill light blue, at the edges of the mandibles pearly white.

Total length (of skin) from tip of bill to end of tail about 6½ in., wing 3, tail 3 3-10th inches.

Hab. Port Natal, Eastern Africa.

This bird belongs to that group of species which appears to form the genus *Coliuspasser*, Rüppel. From either of those species (V. *flavoptera*, Viell.; *V. macrocerca*, Licht.; *V. axillaris*, A. Smith and others,) it may readily be distiguished by the white spot on the wing, and the pearly character of the bill.

Three specimens of this interesting species are included in the many valuable acquisitions of the Academy made through the judicious exertions of Mr. Edward Wilson, who secured them in Paris.

VIDUA *concolor, nobis.*

Plumage entirely black.

Bill strong, conical.

General form and appearance of *Vidua payanensis*, Gm., (V. *rubritorques*, Swainson,) but the bill is larger, and the tail and wing feathers are broader, with no vestige whatever of the red collar which characterizes that species.

Total length (of skin) from tip of bill to end of tail about 12 inches, wing 2 8-10; tail 8½ inches.

Hab. Africa.

Of this species one specimen only is in the Rivoli collection, without label. It is closely allied to the *Vidua rubritorques*, Swainson, but has the bill larger than either of ten specimens of the latter which I have examined. The entire absence of the red collar is, however, the most striking comparative character.

EUPLECTES *nigroventris, nobis.*

Entire upper parts of the plumage bright scarlet, except the wings and tail, which are hair-brown, with paler margins.

Cheeks and entire under parts (from the base of the bill) deep black, except the thighs and under tail coverts, which are pale reddish-white.

Hab. Zanzibar.

Total length, from tip of bill to end of tail, about 4½ inches, wing 2 3-10ths, tail 1½ inches.

This species, one specimen of which from the Rivoli collection is now described, is more nearly related to *Euplectes flammiceps*, Swainson, than to any other species known to me. From that species, as well as from all others of this genus, in which the bright scarlet plumage predominates, it may easily be distinguished by the uniform deep black of the entire under surface of the body. The inferior tail coverts and thighs are pale reddish white in the specimen now described, but I suspect that in the more adult bird, they become scarlet, and also that the wings and tail become darker.

PYRENESTES *coccineus*, *nobis*.

Head, neck, rump, upper tail coverts and flanks, glossy crimson.

Upper surface of the tail of the same colour, but not so glossy.

All other parts of the plumage, brown, some feathers of the back and a few of the wing coverts margined with red.

Hab. Western Africa.

Total length from tip of bill to end of tail about 4 4-10ths inches, wing 2 3-10ths, tail 1 9-10ths inches.

Very similar in colour to *Pyrenestes ostrinus*, (Viell.) but is much smaller and less robustly organized. The bill especially is comparatively weak.

In the species now described the crimson does not extend to the breast as in *P. ostrinus*.

The measurements of the two species are as follows:

	P. ostrinus, (Viell.)	*P. coccineus*, Cassin.
Total length (of skin) from tip of bill to end of tail about	5 6-10ths inches.	4 4-16ths inches.
Length of wing from flexure to tip of longest primary	2 8-10ths "	2 3-10ths "
Length of tail	2 4-10ths "	1 9-10ths "
Length of bill from gape	7-10ths "	5-10ths "
Breadth of under mandible	7-10ths "	5-10ths "

The dimensions of the specimen of *P. ostrinus* here given, agree almost exactly with those given by Mr. Swainson in birds of Western Africa, (Vol. I. p. 158) and also with Viellot's plate *Ois. Chant.* pl. 48.

For a fine specimen of the rare *Pyrenestes ostrinus*, (Viell.) the only specimen in the collection of the Academy, we are again indebted to Mr. Edw. Wilson, who obtained it in Paris. The Academy possesses three specimens of the smaller species now described, two of which were presented by Robt. McDowell M. D., Surgeon at Sierra Leone, and the other was presented, with other interesting birds, by Rev. Wesley Johnson, a pious and learned gentleman attached to an American Mission at Monrovia, Western Africa.

PITYLUS *flavo cinereus*, *nobis*.

Loxia canadensis, Linn, variety A. Lath. Gen. Hist. V. p. 282.

Space about the base of the bill extending to the eyes, and including the chin, black.

Front and top of the head, sides of the neck, breast, and under surface of the wings at the shoulders, bright yellow, running into green on the neck and back.

Upper part of the back, wings and tail yellowish green.

Scapular region, lower part of the back, rump, upper tail coverts, abdomen and under tail coverts light cinerous gray.

Middle of the belly and under tail coverts nearly white.

Hab. South America.

Total length, of skin, from tip of bill to end of tail about 7 inches, wing 4, tail 3 inches.

I have seen one specimen only of this species, which belonged to the Rivoli collection.

It is nearly related to *Loxia canadensis*, Linn., which it strongly resembles in general appearance, but may at once be distinguished by the cinereous lower portion of the whole body above and below, which colour is separated from the yellow of the breast by a well defined line, while in *L. canadensis*, the entire inferior surface is bright yellow.

The bill of the species now described is larger than that of either of eight specimens of *L. canadensis* which I have examined.

ELECTION.

William S. Wilson, Esq., of Philadelphia, was elected a *Member*, and

William F. Van Amringe, Esq., of New York, and Sir Harford Brydges, of London, were elected *Correspondents.*

DONATIONS TO THE MUSEUM.

In May and June, 1848.

May 2d.

Fifteen specimens of Silurian Fossils, from the Hudson river group, Troy, N. Y. Presented by Dr. Skelton, of Troy, through Dr. Morton.

Twenty-five Gypsiferous Fossils, lower part of Carboniferous series of Nova Scotia. From J. W. Dawson, Esq., of Pictou, N. S.

May 9th.

Monotis Poulsoni, Conrad; from Lycoming county, Pennsylvania. Presented by Mr. J. H. Taylor.

Skin of Myrmecophaga jubata, from S. America. Presented by Dr. Vargas, of Venezuela, through Dr. C. D. Meigs.

Cebus capucinus. From Dr. Watson.

Seven Crania, from Pisco, near Lima. Collected by Mr. Wm. A. Foster, and deposited by Dr. Morton.

Rallus Virginianus. From Dr. E. J. Lewis.

May 25th.

Fifty-four specimens of Fossils, from the Red Crag and Coralline Crag of England. Presented by Dr. Wilson.

A collection of five hundred British Coleoptera, named and arranged. Presented by Mr. Wm. Hobson, of Kingsessing, through Dr. Watson.

A collection of American Coleoptera, in spirits. From Dr. Watson.

June 13th.

Mounted specimen of Mustela erminea, from the vicinity of Philada. From Dr. S. W. Woodhouse.

Mounted specimen of Phasianus pictus (fem.) Presented by Mrs. John B. Smith, of Philadelphia.

A fine specimen of Allophane, from ———. From Mr. Ashmead.

Two specimens of Quartz, from Guanaxato, Mexico. Presented by Dr. Griffith.

June 20th.

Amblyopsis ———, and Astacus ———, from the Mammoth cave, Kentucky; several specimens of Atrypa concentrica, from Eighteen Mile Creek, Lake Erie, N. Y.; one of Hippa emerita, from Beasley's point, N. J.; Encrinitic marble, from Lockport, N. Y.; head of an Encrinite, from Kentucky, and a beautiful specimen of crystallized carbonate of lime, from the Mammoth cave. Presented by Mr. Samuel Ashmead.

Coal Fossil (Calamites) from Carbondale, Pennsylvania. From Mr. John Cook.

Dr. Morton deposited four crania, viz.: an Azteck, ancient Peruvian, Kaffir, and a Hottentot.

A large collection of mummied objects, from the Egyptian Catacombs. Deposited by George R. Gliddon, Esq.

DONATIONS TO THE LIBRARY.

In May and June, 1848.

May 2d.

Flore générale des Environs de Paris, selon la methode naturelle. Par F. F. Chevallier. 2d edition. Vols. 1 and 2. 8vo. From Mr. Percival.

Journal of the Indian Archipelago and Eastern Asia. Suppliment to No. 5 and No. 6. From the Editor.

Pamphlets on various subjects connected with physical science and geology, addresses, memoirs, &c., published by Prof. Walter R. Johnson, in 5 vols. 8vo. From the Author.

Report of the Stockholders of the Dauphin and Susquehanna Coal Company, 1848. From the Directors.

Dr. Wilson deposited the following:

Phycologia Britannica. By William Henry Harvey, M. D. Part 27. 8vo.

A history of British Mollusca and their shells. By Prof. Edward Forbes, and Sylvanus Hanley. Part 3. 8vo.

The Quarterly Journal of the Geological Society, (London.) No. 13. 8vo.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 12. 4to.

The Annals and Magazine of Natural History. Vol. 1. 2d series. No. 3.

Esquisses Ornithologiques; description et figures d'Oiseaux nouveaux, ou peu connus. Par le Vte. Du Bus. Livs. 1, 2, and 3. 4to.

Caroli A. Schreiber's Collectanea ad Faunam Brasiliæ. No. 1. 4to.

The Genera of Diurnal Lepidoptera. By Edward Doubleday. Part 17. 4to.

Zoologia typica. By Louis Fraser. Part 12. 4to.

The Birds of Australia. By John Gould. Part 30. Folio.

Palæontographica. Beitrage zur naturgeschichte der Vorwelt herausgegeben von Dr. W. Dunker, und Herm. Von Meyer. Vol. 1. Nos. 1, 2, 3. 4to.

Abbildungen und beschreibungen neuer oder wenig gekanntner Conchylien herausgegeben von Dr. R. A. Philippi. Vols. 1 and 2, and Nos. 1 and 2, Vol. 3. 4to.

A voyage to the islands Madeira, Barbadoes, Jamaica, &c. By Sir Hans Sloane. 2 vols. Folio.

May 9th.

Contributions to the Geology of Kentucky. By Lunsford P. Yandell, M. D., and Benjamin F. Shumard, M. D. 8vo. pamphlet. From Dr. Yandell.

Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 4, No. 7. From the Association.

Memoir of a Tour to Northern Mexico, connected with Col. Doniphan's expedition in 1816 and '47. By A. Wislezenus, M. D. 8vo. From the Author.

The following were deposited by Dr. Wilson.

Natuurkundige beschryving einor Uitmuntende vermameling van Zeldsaame Gedierten, bestaaude in Oost-en West Indische, &c.; door A. Vosmaer. 4to.

Fauna Japonica; auctore Ph. Fr. de Siebold. Pisces. Decas 15. Folio.

Die Skelete der Raubvögel abgebildet und beschreiben von Dr. E. D'Alton, d. A., und Dr. E. D'Alton, d. J. Folio.

Die Skelete der Straussartigen vögel abgebildet und beschreiben von Dr. E. D'Alton, d. J. Folio.

Recherches d'Anatomie comparée sur le Chimpanzé. Par W. Vrolik. Folio.

Mauritii Herold Exercitationes de Animalium vertebris carentium in ovo formatione. Pars 1. Folio.

M. Heroldii disquisitiones de animalium vertebris carentium in ovo formatione. De generatione Insectorum in Ovo. 1 vol. Folio.

Symbolæ physicæ, seu icones et descriptiones Animalium quas in itinere per Africam borealem et Asiam Occidentalem F. G. Hemphrich et C. G. Ehrenberg studio novæ aut illustratæ redierunt. Folio. Insecta Nos. 1—3, and text; Mammalia Nos. 1 and 2, and text; Aves No. 1; Evertebrata No. 1, and text.

Die Skelete die Vierhänder, abgebildet und verglichen von Dr. Chr. Pander, und Dr. E. D'Alton. Folio.

Darstellung neuer oder wenig bekantner Säugethiere nach den originalen des Zoologischen Museums der Universität zu Berlin. Von Dr. H. Lichtenstein. Folio.

Zoologischer Atlas von Dr. Friedr. Eschscholtz.. Folio.

Revue Joologique, par la Société Cuvierienne. Nos. 9, 10, 11, and 12, for 1846; No. 12, 1847; No. 1, 1848.

The Viviparous quadrupeds of North America. By J. J. Audubon, and Rev. John Bachman, D. D. No 25, 26, and 27.

Oken's Isis. Nos. 11 and 12, 1847; Nos. 1 and 2, 1848.

Archiv für Naturgeschichte, gerundet von A. F. A. Wiegmann; herausgegeben von Dr. W. F. Erichson. No. 1, 1848.

Tableau élémentaire d'Ornithologie, par Sebastian Gerardin. 2 vols. 8vo.

May 23d.

The American Journal of Science and Arts. 2d series. No. 15. May 1848. From the Editors.

Mélanges de Botanique et des voyages: par Aubert du Petit-Thouars. 1me. receucil. 8vo. From Mr. James Read.

A discourse on self-limited diseases. By Jacob Bigelow, M. D. From Dr. Griffith.

June 6th.

Dr. Wilson deposited the following works:

A Monograph of the Macropodidæ, or family of Kangaroos. By John Gould. Parts 1 and 2. Folio.

The birds of Australia. By J. Gould. Parts 31, 32, 33, 34. Folio.

The Fossil Flora of Great Britain. By John Lindley and William Hutton. 3 vols. 8vo.

Conchologia iconica. Monographs of nine genera. By Lovell Reeve. 4to.

Iconographie Zoophytologique. Par Hardouin Michelin. 2vols. 4to.

Phycologia Britannica. By William Henry Harvey, M. D. Part 28. 8vo.

A history of British Mollusca and their Shells. By Prof. Edward Forbes and Sylvanus Hanley. Part 4. 8vo.

Illustrations of the Birds of Jamaica. By Philip Henry Gosse. Part 1. 8vo.

The Zoology of the voyage of the Erebus and Terror. Part 7. Fishes by Sir John Richardson. 4to.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 13. 4to.

The Zoology of the Voyage of H. M. S. Samarang, in 1843—'46. No. 1. 4to. Fishes by Sir Jno. Richardson.

The Annals and Magazine of Nat. History. 2d series. Vol. 1. No. 4.

Palæontographical Society. A Monograph of the Crag Mollusca, or descriptions of Shells from the middle and upper Tertiaries of the East of England. By Searles C. Wood. Part 1. 4to.

The Genera of Diurnal Lepidoptera. By Edward Doubleday. Part 18. 4to.

Monographie der Papageien, von Chr. L. Brehm. Parts 1, 2, 3. 4to.

Nomenclature of Coleopterous insects in the collection of the British Museum. Part 2. 12mo.

Index Testarum Conchyliorum quæ adservantur in Museo Nicolai Gaultieri. Folio. Deposited by Dr. Griffith.

Musci Alleghenienses, sive Spicilegia Muscorum atque Hepaticarum quos in itinere a Marylandia usque ad Georgiam A. D. 1842, decerpserunt Asa Gray et W. S. Sullivant. Cincinnavit et exposuit W. S. Sullivant. 2 Vols. 4to. Enumeratio, 1 Vol. 8vo. From Mr. Sullivant.

Contributions to the Bryology and Hepaticology of North America. By Wm. S. Sullivant. Part 1. 4to. From the Author.

Musci and Hepaticæ of the Northern United States. By Wm. Sullivant. 12mo. From the Author.

Fauna der Forvelt, von Dr. C. G. Giebel. Part 3. 8vo. From Mr. J. Lambert.

An investigation of the Theories of the Natural History of Man, by Prichard, and others. By William F. Van Amringe. 8vo. From the Author.

The Pyramids of Gizeh; the surveys by J. E. Perring, Esq.; notes and references to the plans, &c., by E. J. Andrews, Esq.; (Vyse's Pyramids.) Elephant folio. From Dr. S. G. Morton.

June 29th.

Literary Record and Journal of Linnean Association of Pennsylvania College. Vol. 4. No. 8. From the Association.

A defence of Dr. Charles T. Jackson's claims to the discovery of Etherization. By Joseph L. and Henry C. Lord. From Dr. Jackson.

Beschreibung einer neuen art von Anophthalmus. Von Dr. J. Sturm. From the Author.

Anophthalmus. Neue gattung aus der famille der Caraben. Von Jacob Sturm. From the same.

Dr. Wilson deposited the following works:

Suites à Buffon, formant avec les œuvres de cet auteur, un cours complet d'histoire naturelle. 49 Vols. 8vo.

Histoire naturelle des Oiseaux de Paradis et des Rolliers, suivie de celle des Toucans et des Barbus. Par Francois Le Vaillant. 2 Vols. Folio.

Histoire naturelle des Promerops et des Guèpiers. Par F. Le Vaillant, faisant suite à celle des Oiseaux de Paradis par le meme. 1 Vol. Folio.

Voyage en Abyssinie, exécuté pendant les Annèes 1839—'43 par une Commission scientifique, &c.; publiè sous les auspices de M. le Baron de Mackau. Text, 5 vols. 8vo. Plates 15 Livs. Folio.

Exploration scientifique de l'Algérie pendant les années 1840—'42. 38 Livs. 4to.

Illustrations de Zoologie, &c. Par P. Lesson. 4to.

Mémoire sur les Bélemnites. Par M. H. Ducrotay de Blainville. 4to.

La Conchyliologie. Par M. Desaillier D'Argenville. 3d edition. 3 Vols. 4to.

Manuel de l'histoire naturelle des Mollusques et de leurs Coquilles. Par M. Sander Rang. 12mo.

Elements des Sciences naturelles. Par A. M. Constant Dumeril. 3d Edition. 2 vols. 12mo.

Prodrome d'une histoire des Végétaux fossiles. Par M. Adolphe Brongniart. 8vo.

Des Dents des Mammifères, considérées comme caractéres Zoologiques. Par M. F. Cuvier. 8vo.

Histoire des Polypiers Coralligenes flexibles, vulgairement nommés Zoophytes. Par J. V. F. Lamouroux. 8vo.

July 11*th*, 1848.

Dr. Bridges in the Chair.

Letters were read from :—

Dr. Theodore Cantor, of the Bengal Medical Service, dated Fort William, January 8th, 1848, presenting copies of his publications on subjects of Natural History in India.

From Prof. A. D. Bache, Superintendent of the United States Coast Survey, dated Washington, June 15th, 1848, accompanying a donation from the Treasury Department of Maps of Edgartown, Black Rock, and Bridgeport Harbors.

From Dr. Joseph Leidy, Chairman of the Curators of this Institution, dated London, May 30th, 1848, announcing numerous donations to the Society, from various European Societies, distinguished naturalists and other sources, and among them a valuable series of casts of fossils from the Sivalik Hills, to be presented by the Hon. East India Company.

From Dr. Thomas Horsfield, Curator of the East India Company's Museum, dated East India House, June 22d, 1848, announcing that he had shipped for the Academy, the collection of casts of India fossils, (referred to in Dr. Leidy's letter,) together with a cast of the cranium of Sivatherium giganteum, from the original in the British Museum, presented by himself; also several numbers of his splendid work on the plants of Java, &c.

And a letter from the Secretary of the Court of Directors of the Hon. East India Company, dated June 8th, 1848, announcing the presentation to the Society, of the collection of casts of fossils above referred to, and enclosing a list of the same.

A letter was also read from the Secretary of the Geological Society of London, dated June 1st, 1848, acknowledging the receipt of a copy of No. 1, Vol. 1, New Series, of the Journal of the Academy, and of several numbers of its Proceedings.

July 25*th*, 1848.

Dr. Bridges in the Chair.

Communications were read from the Recording and Corresponding Secretaries, resigning their respective offices, the latter in consequence of his removal from Philadelphia. The resignations were accepted, and the following resolutions unanimously adopted :

Resolved, That the thanks of this Society be, and they are hereby tendered, to Prof. Walter R. Johnson, for his faithful discharge of the duties of Corresponding Secretary, during the several years that he has been the incumbent of that office.

Resolved, That the sincere thanks of this Society be tendered to Mr. John Lambert, for his able and assiduous attention to the duties of the Recording Secretaryship during his incumbency of that office.

A letter was read from the Secretary of the Asiatic Society of Bengal, addressed to Dr. Charles Huffnagle, dated January 14th, 1848, accompanying the donation by that Society to the Academy, of 14 volumes of the Asiatic Researches, and 9 volumes of their Journal.

Dr. Morton read to the Society the following extracts from a printed copy of the will of the late Mrs. Elizabeth Stott, of Philadelphia :

"To the Academy of Natural Sciences of Philadelphia, I bequeath my Plantæ Asiaticæ Rariores, in three large folio volumes bound in Russia leather, by Dr. Wallich, Superintendent of the Botanical Garden at Calcutta."

"By Dr. Samuel George Morton, I give and bequeath to the Academy of Natural Sciences of Philadelphia, two thousand dollars, in trust, to invest and keep the same in good security, or in good estate, and to apply the annual income to meet the expenses of the printing and publishing such papers communicated to the Academy, as they shall direct."

The Academy then proceeded to an election for Corresponding and Recording Secretaries, with the following result :—

Corresponding Secretary—John Cassin.

Recording Secretary—William Gambel, M. D.

ELECTION OF CORRESPONDENTS.

Bennett Dowler, M. D., of New Orleans.

A. A. Henderson, M. D., U. S. N.

Robert M. S. Jackson, M. D., Indiana county, Pennsylvania.

August 1st, 1848.

Vice President MORTON in the Chair.

A letter was read from the Secretary of the Royal Society of Copenhagen, dated April 20th, 1847, acknowledging the receipt of recent numbers of the Proceedings.

Also a letter from the Secretary of the American Philosophical Society, to the same effect.

An extract from a letter from Richard Brown, Esq., addressed to Prof. Johnson, dated Sydney Mines, Nova Scotia, July 13th, 1848, in relation to a new fossil plant, (Artesia or Sternbergia) recently obtained in his vicinity.

Dr. Gambel exhibited, and read the description of a new Mexican Quail, which was referred to a committee consisting of Mr. Cassin, Dr. Townsend, and Dr. Bridges.

Dr. Gambel exhibited and made some observations upon several Birds, recently collected in Florida by Dr. Heerman, among them Rosthramus hamatus, Vireo longirostris, and Ardea Pealii, notices of which will be prepared for publication in the Proceedings.

August 8*th*, 1848.

Vice President MORTON in the Chair.

The Curators exhibited the extensive and valuable collection of casts of Sivalik fossils, presented by the Hon. Court of Directors of the East India Company to this Society. (See list at page 79.)

The Publication Committee announced the publication of the second Number of the New Series of the Journal of the Academy.

Dr. Morton offered the following remarks on four skulls of Shoshonee Indians, deposited by him this evening.

"They are the first cranial remains of that singular tribe that have ever been brought to this city. They were obtained by our associate, Col. J. C. Fremont,* a gentleman whose extensive explorations have enriched every branch of natural science. The Shoshonees, or *Diggers*, are proverbially known for their low position in the mental and moral scale of our aboriginal tribes. They wander about in small communities; have no villages; build no cabins; plant no corn, nor cultivate any vegetable. They protect themselves from the weather, under the edges of rocks, and go scantily clothed in the skins of wild animals.

"Two out of four of these skulls are so small, so receding in the forehead, and so depressed over the whole coronal region, that they could not, by intrinsic evidence alone, have been identified with any branch of the aboriginal American race. They want the vertical occiput and general rounded form of the Indian head, and have a narrowness of the face unusual with these people. I submit the following brief memoranda:

"1. Skull of a woman of thirty-five or forty years of age. The anterior region is contracted in all its diameters; the forehead very low and receding, so as to give a facial angle of but seventy degrees. The posterior region is remarkably full in proportion, and the internal capacity gives seventy-three cubic inches as the bulk of the brain.

"2. Another skull of a woman of twenty-five or thirty years, of a conformation like the preceding. The facial angle is larger, but the internal capacity is but seventy-one cubic inches.

"3. Skull of a woman of fifty. The developments much like those of the two preceding heads. The forehead is very low; the face broad, heavy, and protruding; but the vertex is high, and the occiput combines the vertical form and great lateral diameter with that of the common Indian head. Internal capacity eighty-four cubic inches.

"These three crania were found nearly together, a few miles from the expansion of Humboldt's river in the Shoshonee country, and Captain Fremont was entirely satisfied that they belonged to people of that nation.

"Heads of such small capacity and ill-balanced proportions could only have belonged to savages; and it is interesting to observe such remarkable accordance between the cranial developments, and mental and moral faculties. Perhaps we could nowhere find humanity in a more debased form than among these very Shoshonees, for they possess the vices, without the redeeming qualities of the surrounding Indian tribes; and even their cruelty is not combined with courage. A well formed head is no evidence of superior intellect; but on the other hand, a head that is defective in all its proportions, must be almost inevitably associated with low and brutal propensities, and corresponding degradation of mind; and such is pre-eminently the case with the wretched Shoshonees.

---

* They were obligingly placed in my hands by Mr. Edward M. Kern, the ingenious draftsman of Col. Fremont's expedition.

"4. The fourth skull of this series is the very type of Indian conformation; broad and full in the inter-parietal region; the occiput vertical and the vertex itself remarkably prominent. The face is broad; the nose salient; the skull thick; and the whole structure massive to an extreme degree: yet this head, which is that of a man of sixty years, has an internal capacity of ninety-one cubic inches, or ten above the average of his race. The tribe to which he belonged could not be ascertained. The skull was picked up on the western slope of the Californian mountains, and among the haunts of the Shoshonees; but its developments would lead me to refer it to some other and more intellectual tribe."

The following resolutions were offered by Dr. Morton, and unanimously adopted:—

Resolved, That the cordial thanks of this Society be tendered to the Hon. Court of Directors of the East India Company, for their very liberal and most interesting donation of a series of casts of the Sivalik fossils, which have been safely received, and are now in progress of arrangement in the collections of the Academy.

Resolved, That the grateful thanks of this Society be presented to their associate, Dr. Thomas Horsfield, for his present of the cast of the cranium of Sivatherium giganteum, (which has been received in perfect condition, and will form a most valuable addition to the Academy's series of Sivalik fossils,) and also for the accompanying copies of the Plantæ Javanicæ rariores, and Annulosa Javanica.

August 22*d*, 1848.

Vice President MORTON in the Chair.

Letters were read from the Rev. Wm. Scoresby, D. D., dated Whitby, Yorkshire, England, July 19th, 1848, and from Col. J. C. Fremont, dated Washington, D. C., August 19th, 1848, severally acknowledging the receipt of their notices of election as Correspondents.

Dr. Gambel read a paper describing new California Quadrupeds, which was referred to the following Committee: Mr. Cassin, Dr. Wilson, and Dr. Bridges.

August 29th, 1848.

Vice President MORTON in the Chair.

The Committee on the following papers by Dr. Gambel, reported in favour of publication :—

Description of a new Mexican Quail.

By WILLIAM GAMBEL, M. D.

ORTYX *THORACICUS.

With a full somewhat pointed crest, the feathers of which are black, obscurely mixed with dull-brown and rufous. Nape mottled with black and bright rufous, and traversed by two interrupted white lines, which commence of a cinereous colour about the front and pass over the eyes. Throat and cheeks pale cinereous, each feather with a narrow black margin. Sides of neck, breast and sides pale rufous; deepest on sides of neck, where the feathers have a few scattering black spots. Lower part of belly and vent white. Under tail coverts rusty-white, mottled with black. Tail very short and rounded, its colour dark-brown, with freckled irregular bars of rusty-white. Lower part of back and upper tail coverts irregularly variegated with different shades of grey, fulvous and black. Upper part of back dark rufous, the centres of the feathers grayish, and traversed by fine irregular, dusky lineations. Wings and scapulars beautifully variegated with black, rufous and grey; wing coverts and scapulars having the upper vanes deep black, margined and lined with rufous, the lower vanes greyish freckled, and blotched with black, while the shafts are dull whitish.

Tertiaries on their upper vanes with broad fulvous margins. Feet and legs pale, bill black. Irides chocolate-brown.

Length 8 inches, wing 5 inches, tail 2 inches, tarsus 1 3-10ths, ridge of bill 6-10th, from angle of mouth 7½-10ths.

This appears to be an undescribed species of that group of quails which so much resemble our common *O. virginianus*. The present, however, is readily distinguished from that species by its much longer bill and very short tail, as well as its general markings, particularly beneath; the breast and sides being of a plain fawn colour, or pale rufous. The only specimen from which I describe was brought from Jalapa, Mexico, by Mr. Pease. It does not appear to be quite adult, and the markings about the head and throat may be somewhat different in the old bird; still, however, its characters are sufficiently marked. Judging from description, it must very nearly resemble the *O. pectoralis*, of Gould; but besides the difference of markings, he makes no mention of that species having a crest. The length of the bird, as well as of the wing, is in this also just one inch greater, which would hardly be the case in a young bird.

Descriptions of two new California Quadrupeds.

By WM. GAMBEL, M. D.

*Dipodomys *agilis.*

Colour above yellowish-brown, mixed with dusky; beneath pure white, extending half way up the sides. Head elongated, tapering from the ears to a sharp point. Ears nearly round, sparsely hairy. Eyes large, dark brown. A large pouch on each side of the head, opening externally on the cheeks. Both hind and fore feet with four toes and the rudiment of a fifth. The hind legs very long and strong. Tail very long, slender covered with hair, and ending in a pencillated tuft.

Length 10½ inches, including the tail, which is 6½ inches.

$$\text{Dental System,} \qquad \begin{matrix}\text{Teeth,}\\ 20\end{matrix} \quad \begin{cases} \text{10 upper} \begin{cases} \text{2 incisors.} \\ \text{8 molars.} \end{cases} \\ \text{10 lower} \begin{cases} \text{2 incisors.} \\ \text{8 molars.} \end{cases} \end{cases}$$

In the upper jaw the incisors are divided by a longitudinal furrow.

This beautiful Jerboa-like animal is an abundant inhabitant of the vineyards and cultivated fields of the Pueblo de los Angeles, Upper California.

Like the other pouched animals, it forms extensive burrows, traversing the fields in different directions, and are only dislodged during the process of irrigation. They leap with surprising agility, sometimes the distance of ten feet or more at a spring, and are difficult to capture.

*Mus *Californicus.*

Dark grey; lighter about the head and shoulders; above tipped with light brown; on the sides almost fulvous. Beneath almost white. Fore feet with four toes and the rudiment of a fifth. Hind feet with five toes. Tail nearly five inches in length, pretty thickly covered with short rigid hairs. Head acutely conical; ears large, rounded, thin, sparsely hairy; one inch in length, and 5-8ths in breadth. Length of the body 4¾ inches. Old male,—bristles, of the nose 2½ inches.

I captured but a single specimen of this species in a field near Monterey, Upper California, which, with those of the former, I had the misfortune to lose.

The Committee to whom was referred the duty of preparing a corrected list of Members and Correspondents, presented a report, which was adopted, and two hundred and fifty copies of the list ordered in 4to. form. The following committee was appointed to superintend the publication of the same: Drs. Zantzinger, Griffith, and Bridges.

ELECTION.

Alexander Biddle, Esq., of Philadelphia, was elected a *Member*, and the following were elected *Correspondents*:—

Hugh E. Strickland, Esq., of London.
Edward Blyth, Esq., of Calcutta.
Frances S. Holmes., Esq., of Charleston, S. C.
Theodore Cantor, M. D., of the Bengal Medical Service.

DONATIONS TO THE MUSEUM

In July and August, 1848.

July 11*th*, 1848.

Two Cabinets of Shells, containing about 1200 specimens, forming part of the *Hyde Collection*. Presented by Andrew R. Chambers, Esq., of Philadelphia.

A collection of Mollusca, Cirrhipeda, and Crustacea, amounting to 54 specimens. Presented by Dr. Thomas B. Wilson.

Very fine specimen of Lepidodendron, from the vicinity of Pottsville, Pa. From William Dewey, Esq.

Two fine specimens of fossil plants, from Schuylkill Co., Pa. From G. N. Jones, Esq.

August 1*st*.

Two fine specimens of Terebratula Harlani, (Morton,) from Timber Creek, New Jersey. Presented by Mr. Edward Harris.

The following specimens of New Minerals were presented by Francis Markoe, Jr., Esq., of Washington, through Dr. Morton, viz.: Arkansite, 2 specimens, from Magnet Cave, Hot Springs Co., Arkansas; Scarbroite, from Scarboro, England; Pyrrhite, from the Azores; Ozarkite; from Magnet Cave; and Schorlamite, from do.

Dr. Watson presented two rolled specimens of Producta and Encrinites, from Ohio.

August 8*th*.

The following large and valuable collection of casts of Fossils from the Sivalik Hills, was presented by the Court of Directors of the Hon. East India Company.

Dinotherium Indicum, part of Lower Jaw, from Perim Island.
Do. do. Vertebra, do do.
Elephas insignis, Cranium, from Sivalik Hills.
Do. hysudricus, Grinder, do. do.
Do. namadicus, do. from Nerbudder.
Elephas, first Vertebra, from the Sivalik Hills.
Do. Cliftii, Grinder, from Ava.
Mastodon perimensis, Cranium, from Perim Island.
Do. do. Grinder of the Lower Jaw, from Perim Island.
Do. sivalensis, part of Cranium from the Sivalik Hills.
Do. do. 3 spec., Grinders, upper and lower, from the Sivalik Hills.
Do. latidens, Grinder and part of Palate, do do.
Hippopotamus (Tetraprotodon) palæindicus, anterior part of the Lower Jaw, from Nerbudder.
Hippopotamus (Hexaprotodon) sivalensis, Cranium, from the Sivalik Hills.
Do. do. do. Lower Jaw, do. do.
Do. (Tetraprotodon) palæindicus, Cranium, do. do.
Rhinoceros palæindicus, Do. do. do.
Sus giganteus, Do. do. do.
Equus namadicus, Do. from Nerbudder.
Do. sivalensis, Do. from Sivalik Hills.
Do. do. Lower Jaw, part, from Sivalik Hills.
Sivatherium giganteum, fem., Cranium, do. do.
Do. do. Horn part, do. do.
Do. do. Cranium, fragment, do. do.
Mastodon angustidens, Grinder.
Do. latidens, do.
Do. longirostris, do.
Merycopotamus dissimilis, Cranium, from the Sivalik Hills.
Do. 2 spec. do. Lower Jaw, do. do.
Do. do. Humerus, do. do.

Calicotherium sivalense, Cranium and Lower Jaw, from the Sivalik Hills.
Do. do. part of Upper Jaw, do. do.
Do. do. part of Lower Jaw, do. do.
Hippohyus sivalensis, Cranium, do. do.
Equus. Do. Cranium, part, with range of teeth, from Sivalik Hills.
Do. Vertebra, do. do.
Hippotherium antilopinum, Lower Jaw, part, do. do.
Sivatherium giganteum, Tarsal Bones, do. do.
Camelopardalis affinis, Cervical Vertebra, do. do.
Capra, part of the Cranium, do. do.
Sivatherium giganteum, Vertebra, do. do.
Do. do. Lower Jaw, fragment, do. do.
Do. do. Femur, do. do. do.
Do. do. Anterior extremities restored, do. do.
Camelus sivalensis, Cranium, do. do.
Camelopardalis, Humerus, do. do.
Bos, Cranium, with part of Horns, from Nerbudder,
Do. Cranium,
Ursus (Hyænarctos) sivalensis, 1 spec., Cranium, do. do.
Do. do. 2 spec. do. Femur, do. do.
Emys Hamiltonoides, do. do.
Emys, do. do.
Colossochelys Atlas, Humerus, do. do.
Do. do. Episternum, do. do.
Do. do. Triphosternum, do. do.
Leptorhynchus giganteus, Muzzle, do. do.
Do. gangeticus A, part of Cranium, do. do.
Do. do. B, do. do. do. do.
Crocodilus biporcatus, do. do. do. do.
Capra, do. do. do. do.
Felis palæotigris, 2 spec., Cranium, do. do.
Do. cristata, do. do. do.
Canis, do. do. do.
Do. do. do. do.
Hyæna, A, do. do. do.
Do. B, do. do. do.
Ursus (Hyænarctos) sivalensis, Lower Jaw, do. do.
Enhydridon ferox, A, Cranium, do. do.
Do. do. B, do. do. do.
Do. do. C, do. do. do.
Machairodus sivalensis, A, Cranium, fragment, do. do.
Do. do. B, do. do. do.
Quadrumana, Simia, Lower Jaw, part, do. do.
Aves, Fam. Struthionidæ, fragment of Left Tibia, do. do.
Pisces, Fam. Silenidæ, fragment, do. do.
Lutra palæindica, Cranium, do. do.
Colossochelys Atlas, (young,) Cranium, do. do.
Crocodilus biporcatus, (young,) part of Cranium, do. do.
Seven smaller pieces, undetermined.

Also, a cast of a Meteorite, from India.

A small box containing 37 specimens of smaller size, most of them without names.

In addition to the above, a fine cast of the cranium of Sivatherium giganteum, taken from the original in the British Museum, was received from Dr. Thomas Horsfield.

Dr. Morton deposited four crania of the Shoshonee tribe of Indians, collected by Mr. Edward M. Kern.

Mr. Lambert presented a specimen of Amblyopsis spelæus, and of Astacus pellucidus, from the Mammoth Cave, Kentucky.

Aug. 15th.

Fifty-nine specimens, comprising twenty species of Lepidoptera, from Florida, Key West, and Charleston, collected and presented by Dr. Heermann. Also, from the same donor, eggs of Sterna Cayenna, S. fuliginosa, S. stolida, Pelecanus fuscus, Phalocrocorax floridanus, Ardea nycticorax, A. ludoviciana.

DONATIONS TO THE LIBRARY.

IN JULY AND AUGUST, 1848.

July 15th.

Mémoires de la Société de Physique et d'Histoire naturelle de Genéve. Tome XI. Part. 2. 4to. Paris: 1848. From the Society.

Notices sur les Plantes rares cultivées dans le jardin botanique de Genéve. Par Aug. P. et Alphonse De Candolle. 4to. From the same.

Catalogue of Mammalia inhabiting the Malayan Peninsula and Islands. By Theodore Cantor, M. D. From the Author.

Spicilegium Serpentium Indicorum, by Dr. Theodore Cantor. From the same.

General Features of Chusan, &c. By Dr. Cantor. From the same.

Catalogue of Reptiles inhabiting the Malayan Peninsula and Islands. By Dr. Cantor.

A portion of the Proceedings of the Entomological Society of London, for 1842, describing Coleoptera from Chusan and Canton, by the Rev. F. W. Hope. From Dr. Cantor.

Strawberry Report. Read before the Cincinnati Horticultural Society, Aug., 1847. From Mr. Percival.

Journal of the Indian Archipelago and Eastern Asia. Vol. 2. Nos. 1 and 2. From the Editor.

American Journal of Science and Arts. Second series, Vol. 6. No. 16. From the Editor.

Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 4. No. 9. From the Association.

Thoughts on the Principles of Taxation, &c. By C. Babbage, Esq. From the Author.

United States Coast Survey: Maps of Edgartown, Black Rock, and Bridgeport Harbors. From the United States Treasury Department, through Prof. A. D. Bache.

Narrative of the Arctic Land Epedition to the mouth of the Great Fish River and along the shores of the Arctic Ocean in 1833—'35. By Capt. Back, R. N. 8vo. Deposited by Dr. Wilson.

Comptes rendus, from Jan. 3d to April 14, 1848. From the same.

July 18th.

Plantæ Asiaticæ Rariores, &c. By Nathaniel Wallich, M. and Ph. D. 3 vols. folio. From the late Mrs. Elizabeth Stott, of Philadelphia through her executors.

Journal of the Asiatic Society of Bengal. Vols. 8, 9, (incomplete,) 10, (do.,) 11, 12, 13, 14, 15, 16; and Asiatic Researches, vols. 6 to 26. 4to. From the Asiatic Society, through Dr. Chas. Huffnagle.

Annual Report of the Commissioner of Patents for 1847. From the Hon. Geo. M. Dallas.

List of the genera of recent Mollusca, their synonyma and types. By J. E. Gray. From the Author.

The following were deposited by Dr. Griffith:

Historia Animalium à Wolfgango Franzio. 6th edition. 12mo.

Florum et Coronariarum odoratarumque nonnullarum herbarum historia. Auctore Remberto Dodonæo. 12mo.

Historia Medica, &c., Auctore Gulielmo Vanden Bossche. 4to.

Descriptio Terræ Sanctæ et regionum finitimarum, auctore Borchardo; Item Itinerarium Hierosolymitarum Bartholomæi de Saligniaco, (in one vol. 4to.)

Flora Virgiliana, seu Catalogus Plantarum in Virgilii operibus occurrentium. 8vo.

Flora Classica: herausgegeben von Dr. Julius Billerbeck. 8vo.

The following were deposited by Dr. Wilson:—

A voyage to Abyssinia in 1809 and 10, by order of the British Government. By Henry Salt, Esq., F. R. S. 4to.

A Voyage round the World; but more particularly to the N. W. Coast of America in 1785—'88, in the King George and Queen Charlotte, Capts. Portlock and Dixon. By Captain George Dixon. 4to.

Fauna Orcadensis, or the natural history of Orkney and Shetland. By the Rev. George Law. 4to.

Narrative of travels and discoveries in Northern and Central Africa, in 1822, '23, and '24. By Major Denham, Capt. Clapperton, and the late Dr. Oudney, &c. 4to.

Journal of a second expedition into the interior of Africa from the Bight of Benin to Soccatoo. By the late Commander Clapperton. 4to.

An attempt towards the natural history of the fossils of England, in a catalogue of the English fossils in the collection of J. Woodward, M. D. 2 vols. 8vo.

Eduardi Luidii apud Oxonienses Cimiliarchæ Ashmoleani Lithophylacii Britannici Ichnographia. 8vo.

Caroli a Linné Systema Naturæ. 12th edition. 2 vols. 8vo.

Annals and Magazine of Natural History. Vol. I. 2d series. No. 5.

Phycologia Britannica. By William Henry Harvey, M. D, Part 29.

Conchologia iconica—Genus Bulimus. By Lovell Reeve. 4to.

Illustrations of the Birds of Jamaica. By Phillip Henry Gosse. Part 2. 8vo.

Abbildungen and Beschreibungen neuer oder wenig gekanntner Conchylien, von Dr. R. A. Philippi. Vol. 3. No. 3. 4to.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 14. 4to.

The Genera of Diurnal Lepidoptera. By Edward Doubleday. Part 19. 4to.

A history of British Mollusca and their shells. By Prof. Forbes and Sylvanus Hanley. Part 5. 8vo.

August 1st.

Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 4. No. 10. From the Association.

Annual Report of the Regents of the University of the State of New York, March 2, 1848. From the Regents.

Statistics of Coal: prepared by Richard Cowling Taylor. 8vo. Presented by Dr. Wilson.

August 8th.

Plantæ rariores Javanicæ, quas in Insula Java, annees 1802—1818 legit et investigavit Thos. Horsfield, M. D. Parts 1, 2 and 3. 4to. From the Author.

Annulosa Javanica. By Wm. S. Macleay, Esq. No. 1. 4to. From Dr. Horsfield.

Journal of the Academy of Natural Sciences of Philadelphia. New Series. Vol. 1. No. 2. 4to. From the Publication Committee.

August 15th.

Proceedings of the American Academy of Arts and Sciences. Vol. 1. pp. 297–346. 8vo. From the Academy.

Descriptions of N. A. Coleoptera, chiefly in the cabinet of J. L. Le Conte, M. D. By S. S Haldeman. 4to. From the Author.

Descriptions of Plants collected by Wm. Gambel, M. D., in the Rocky Mountains and Upper California. By Thomas Nuttall. 4to. From the Author.

August 22d.

The Viviparous Quadrupeds of North America. By J. J. Audubon and Rev. J. Backman. No. 28. Elephant folio. Deposited by Dr. Wilson.

Comptes Rendus. Nos. 16–22, for 1848. From the same.

Archiv für Naturgeschichte, von A. P. A. Wiegmann. No. 4, 1847. From the same.

Boston Journal of Natural History. Vol. 5. No. 4. From the Boston Society of Natural History.

September 5th, 1848.

Vice President MORTON in the Chair.

A letter was read from Dr. J. J. Kaup, dated Darmstadt, August 4, 1848, acknowledging the receipt of his notice of election as a Correspondent, and recommending the purchase by this Society, of certain collections of fossil remains and European Lepidoptera offered for sale in Germany, and enclosing catalogues of the same.

A communication was read from the Secr tary of the Linnean Society, of London, dated June 22d, 1848, acknowledging the receipt of Part 1, Vol. 1, New Series of the Journal of the Academy, and of recent Nos. of the Proceedings.

An extract from a letter from Francis S. Holmes, Esq., dated Charleston, South Carolina, August 24th, 1848, was read, proposing an exchange of a series of fossils from the Eocene of that State, for a copy of the first series of the Journal of the Academy; which was agreed to, and the Publication Committee directed to make the exchange.

September 18th, 1848.

Dr. BRIDGES in the Chair.

Letters were read from Dr. A. A. Henderson, U. S. N., dated September 16, 1848, and from W. F. Van Amringe, Esq., dated Montgomery, Orange Co., N. Y., September 12th, 1848, severally acknowledging the receipt of their notices of election as Correspondents.

A communication from the Secretary of the American Philosophical Society, dated Philadelphia, September 15, 1848, acknowledging the receipt of late Nos. of the Proceedings.

Prof. Haldeman exhibited specimens of a fruit, which he supposed to be hybrid between the Chinquapin and the common Chestnut. A hybrid between the Chinquapin and the Spanish Chestnut, was also shown to exist.

The following resolution was adopted:

Resolved, That the Secretary be instructed to address a letter to the officers of the American Association for the advancement of Science, inviting the members of that body to visit the Hall of the Academy during their stay in Philadelphia.

October 3d, 1848.

Vice President MORTON in the Chair.

Dr. Hallowell read a paper intended for publication, entitled "Notes of the post-mortem appearances observed in a *Cynocephalus porcarius*," which was referred to a Committee consisting of Drs. Leidy, Zantzinger and Morton.

A communication was presented from Dr. R. W. Gibbes, of Columbia, South Carolina, entitled "Monograph of the Fossil Squalidæ of the United States, continued," which was referred to the Committee on the former portion of the memoir.

Mr. Cassin read a paper describing a new Tanager from the Rio Negro, (*Tanagra nigro-aurita*,) which was referred to a Committee consisting of Drs. Wilson, Gambel and Bridges.

On leave granted, the Committee to whom was referred Mr. Henry C. Lea's catalogue of Tertiary Fossils of the U.S., reported in favor of publication in the Proceedings.

October 10*th*, 1848.

Vice President MORTON in the Chair.

A communication was read from Prof. Walter R. Johnson, Secretary of the American Association for the advancement of Science, dated Philadelphia, September 25th, 1848, returning the acknowledgements of that body for "the liberal and handsome manner in which the numerous and splendid collections of the Academy were offered for the inspection of the members."

A letter was read from Francis S. Holmes, Esq., of Charleston, S. C., dated October 2d, 1848, acknowledging the receipt of his notice of election as a Correspondent.

Also a letter from Mr. George B. Allinson, dated October 3d, 1848, acompanying his donation of minerals, this evening announced.

October 17*th*, 1848.

Mr. VAUX in the Chair.

Letters were read :—

From the Secretary of the Lyceum of Natural History of New York, dated October 10th, 1848, acknowledging the receipt of Nos. 1 and 2, New Series of Journal of the Academy :—

From Dr. Bennet Dowler, dated New Orleans, October 3d, 1848, and from Dr. R. M. S. Jackson, dated Blairsville, Pennsylvania, October 7th, 1848, severally acknowledging the receipt of their notices of election as Correspondents :—

From John A. Guex, dated New York, October 15, 1848, announcing that he had forwarded for this Society recent Nos. of the Annals of the Royal Agricultural Society of Lyons.

October 24*th*, 1848.

Dr. BRIDGES in the Chair.

A letter was read from Mr. B. M. Norman, of New Orleans, dated October 6th, 1848, announcing the late decease of Dr. William M.

Carpenter of that city, a correspondent of this Institution, and stating that at the request of the latter, he had transmitted for the cabinet of the Academy, the specimens of Tapir fossils, described and figured by Dr. Carpenter in Silliman's Journal, New Series, No. 2.

A letter was read from Prof. Walter R. Johnson, addressed to Dr. Morton, dated Washington, October 18, 1848, recommending to the Academy to memorialize Congress on the advantage and importance of an examination into the Natural History of the Southern portion of Chili, and of adding one or more naturalists to the astronomical expedition now fitting out by the U. S. Government for that region, under the command of Lieut. J. M. Gilliss U. S. N. Referred to a Committee consisting of Dr. Morton, Dr. Bridges and Mr. Vaux.

Mr. Cassin read a communication from Mr. Wm. S. Pease, intended for publication, describing the geological features of the district of country lying between Puebla and the Gulf of Mexico, with some remarks on its Natural History. Referred to Mr. Cassin, Dr. Townsend, and Mr. Vaux.

Mr. Cassin also presented a Catalogue of Birds, collected by Mr. Wm. S. Pease, during the march of the Army of the United States from Vera Cruz to the city of Mexico. Referred to Drs. Townsend, Gambel and Woodhouse.

October 31*st*, 1848.

Vice President MORTON in the Chair.

The Committee on Mr. Cassin's description of a new Tanager, reported in favor of publication.

Description of a new Tanagra, in the Collection of the Academy of Natural Sciences of Philadelphia.

BY JOHN CASSIN.

TANAGRA *nigro-aurita*, nobis.

Superior and point of the inferior mandible, black,—other portions of the inferior mandible, yellow.

Head above, chin and throat, ending in a point on the breast, crimson.

A broad stripe from the base of the bill, including the eye and ear, glossy black. This stripe completely separates the crimson of the upper part of the head from that of the throat.

Entire upper surface of the body, except the head, black, which is also the color of the wings and tail. Under parts of the body from the breast, white.

Legs, in the dried skin, nearly black.

Total length of skin, from tip of bill to end of tail, about 6½ inches; wing 3 1-10th; tail 2 8-10th inches.

Hab. Rio Negro, South America.

This species very much resembles both *Tanagra gularis*, Linn., and *capitata*, D'Orbigny, from either of which it may be distinguished by its black nares and ears, and also by the absence of purple on the breast. In the species now described, of which I have seen six specimens, the throat and breast are of the same color, exactly as the upper part of the head, without the slightest appearance of the purple into which the crimson changes in both the species mentioned. The legs, also, in the present species, are nearly or quite black, in which respect they differ from those of *T. capitata*, which are yellow.

A specimen of this remarkable species was obtained in Europe by Mr. Edward Wilson, to whose valuable additions to the collection of the Academy I have frequently alluded. I have also seen other specimens, two of which I procured from a collection, brought from the Rio Negro by Mr. John Wülf, an intelligent merchant, formerly resident at Parà.

The Committee on the following communication by Dr. Hallowell, reported in favor of publication :—

Notes of the post-mortem appearances observed in a Cynocephalus porcarius, which died in the Menagerie at Philadelphia.

BY EDWARD HALLOWELL, M. D.

The right lung is greatly enlarged and tuberculous ; the tuberculous matter exists in the form of infiltration, and is disseminated in masses leaving intervening spaces of hepatized lung of a brick-red color, firm and resisting to the touch ; the greater portion of the lower lobe of this lung, as well as a very considerable part of the upper, is occupied with this matter ; the opposite lung is comparatively healthy, a few tuberculous deposits being observed at its root and apex, and also in the lower lobe, which is somewhat congested. Several of the bronchial glands are enlarged, one of them measuring fourteen lines in length. *Pericardium* pale, containing no serosity ; coronary veins much enlarged. *Abdomen.* Mucous membrane of œsophagus pale, apparently healthy ; the *liver* is of a dark-chocolate color, and has four lobes ; the second of these counting from the right is the largest ; the liver measures five and a half inches transversely, three inches antero-posteriorly, and one and a quarter in depth ; no tubercles are observed in it ; the *gall-bladder*, which lies in a sulcus upon the under surface of the largest lobe is moderately distended with bile, tinging its parietes a light-green color ; the *spleen* measures three and three quarter inches in length by one and a half in breadth in its broadest part ; it is elongated at its right extremity, tapering almost to a point ; the opposite extremity is rounded, the entire organ presenting a somewhat triangular form ; no tubercles are observed in any part of it ; its tissue is of a deep-purple color, almost black from congestion : the stomach measures six inches transversely, by three and a half from the entrance of the œsophagus to its greater curvature ; its muscular fibres are very apparent ; the œsophagus enters it about the middle of the lesser curvature ; the mucous membrane of the stomach is of a brownish-red color near the pylorus, elsewhere of a pale onion tint ; no crypts are observable ; the *pancreas* measures three inches transversley, one and a quarter in its greatest breadth near its head ; the *large intestine*, including the cœcum, measures two feet nine and a half inches (Fr.) in length; the cœcum measures two inches five lines in length; the mucous membrane of the large intestine is of a greenish olive tint throughout; the isolated crypts are very distinct; the small intestine measures six feet two inches; the mucous membrane is apparently healthy, of a pale onion tint slightly reddened in portions; the isolated glands are very numerous near the upper extremity of the duodenum; there are no valvulæ conniventes; eight plaques of Peyer are counted in the ileum; the largest is about one and a half inches in length; the mesenteric glands are healthy: the *kidneys* are of a brick-red color, tissue healthy; *bladder* not examined.

The Committee to whom was referred the following catalogue of Mexican Birds, reported in favor of publication.

Catalogue of Birds collected by Mr. Wm. S. Pease, during the march of the Army of the United States from Vera Cruz to the City of Mexico.

By John Cassin.

Upon publicity being given to the fact that the Department of War of the United States of America intended sending an expedition, to consist of both Naval and Military forces, against the city of Vera Cruz, Mr. Wm. S. Pease, Member of the Lyceum of Natural History of New York, and Correspondent of the Academy of Natural Sciences of Philadelphia, proposed to embrace an opportunity which would thus probably offer, of his accompanying the military force into Mexico.

Having succeeded in effecting a suitable arrangement, Mr. Pease joined the army under General Scott, at Vera Cruz, and continued with it until the final evacuation of the country.

The facilities for collecting and for observation possessed by Mr. Pease were necessarily of a restricted character, resulting from the position of the army in a hostile country, and particularly so during the marches, when it was constantly attended by bands of armed inhabitants, or guerillas, who hovered in its vicinity for the purpose of committing depredations upon persons who ventured away from the main body. Notwithstanding all disadvantages, however, Mr. Pease made very interesting collections of birds, insects and other productions of the country.

Mr. Pease represents himself as particularly indebted to Col. G. W. Hughes of the 1st Regiment Maryland infantry, and to Otis Hoyt, M. D., Surgeon of the Massachusetts volunteers, and medical director of the general hospital at Jalapa, whose kindness and encouraging treatment of Mr. Pease, are honorable to those gentlemen as friends of science, and worthy of the character of American officers.

1. *Spizaëtus tyrannus*, (De Wied) Pl. col. 73.

From the neighborhood of Perote;—an adult female.

2. *Herpetotheres cachinnans*, (Linn.) Viell. Gal. 19.

3. *Falco sparverius*, Linn. Aud. Birds of Am. pl. 42.

Mr. Pease observes: "Only found about the upper part of the *tierra templada*, very common."

4. *Astur nitidus*, (Lath.) Pl. col. 87.

5. *Micrastur guerilla*, nobis (n. s.)

Adult ♀ ?.—Entire upper surface of the body, head, wings and tail, hair brown, a shade darker on the head. Feathers on the cheek and jaw, brown, which color forms a partial collar on the front of the neck.

Throat, fore neck, abdomen and under tail coverts, white, with a few brown spots or bars on the latter.

Neck encircled by a narrow band of white, all the feathers of which are tipped or edged with brown.

Breast, flanks and thighs, white, every feather having about three bands of the same brown as the back.

Edge of the wing at the flexure and inner wing coverts, white; many of the feathers with lunated spots of brown. All the quill feathers with broad white bars on their inner webs; fifth primary longest.

Upper tail coverts spotted with white. Tail with four or five narrow white bars, and tipped with white.

Total length of skin, from tip of bill to end of tail, about 15 inches, wing 7, tail 6½ inches.

Young ♀ ?—Under parts tinged with fulvous or buff. Breast, flanks and thighs with the bands much narrower, and the throat with a more decided brown collar.

Feathers of the back and wing coverts, with ferruginous and white spots. Upper tail coverts with the white markings more numerous.

Superciliary feathers white, tipped with brown.

Total length of skin, from tip of bill to end of tail, about 14 inches, wing 6½. tail 6 inches.

Hab. Near Jalapa, Mexico.

This species considerably resembles some stages of plumage of the *M. xanthothorax* (Cuv.) and the *M. leucauchen*, (Temm.) Pl. col. 92, 306, (which are probably identical.) It may readily be distinguished from either of those by the entire absence of the rufous chesnut color of the breast and back, and by the much broader, and lesser number of the bands upon the under surface of the body.

In the species now described, the character of the white markings of the tail is also different from that of *M. xanthothorax* or of *leucauchen*, and more approaches that of the larger species, *M. brachyterus*, (Cuv.) These markings are broad and truncated at the shaft of the feather, instead of ending acutely and forming triangles, as in those species.

Two specimens (♂ and ♀ . ?) were brought by Mr. Pease; a third specimen of the same species, in more adult plumage, was previously received from Paris, in the collection made by Mr. Edward Wilson.

6. *Accipiter fuscus*, (Gm.) Falco velox, Wilson, Am. Orn. 45, 46.

Near Jalapa all the year. The two specimens (nearly adult and young ♀) brought by Mr. Pease, are perfectly similar to others obtained in the vicinity of this city. In both specimens the tail is quite even, in which respect they differ from Mr. Swainson's description of *A. Mexicanus*.

7. *Accipiter Cooperi*, (Bonap.) Aud. Birds Am. pl. 36, 141.

A young male from near Jalapa.

Dr. Kaup, in the Isis, 1847, page 178, and Mr. Gray, in List of specimens of Birds in the British Museum, give *Accipiter Cooperi* (Bonap.) as a synonyme for

Accipiter pileatus (De Wied) Pl. col. 205. This is not correct, as may readily be ascertained by reference to numerous specimens of both those species in the collection of this Academy.

In fact but a small degree of resemblance exists between any age or sex of the two species, so far as I have seen. The *A. Cooperi*, is much the larger, nor have I ever seen a specimen of this species assuming plumage at all approaching that represented in Pl. col. 205.

8. *Circus cyaneus*, (Linn.)

Young birds from near Jalapa.

9. *Ephialtes atricapilla*, (Natt.) Pl. col. 145.

10. *Syrnium* ——— ?

A species to which I am not at present prepared to attach a specific name. I have reason to suppose that it is one of the species which Mr. Gray has named in his List of the Rapacious birds in the British Museum, of which no description has come under my notice, if published.

11. *Nyctidromus Derbyanus*, Gould. Icon. Av. ii. pl. 2.

A young bird from the neighbourhood of Jalapa, where it lives all the year.

12. *Momotus brasiliensis*, (Lath.)

Near Jalapa, found in thickets, iris red.

In the specimen brought by Mr. Pease, and also in two others from Mexico in the Rivoli collection, the crown of the head is much lighter coloured than is usual in South American specimens.

13. *Trogon mexicanus*, Swainson, Gould. Mon. Pl. 2.

14. *Trogon exalapensis*, Du Bus, Esquisses Orn. I. pl. 2.

Two males from the neighbourhood of Jalapa.

15. *Trogon ambiguus ?* Gould. Mon. pl. 4.

A young bird, sufficiently ambiguous at least to be referred to this species. Of these three species, Mr. Pease has the following note: "Live on the *tierra templada* the greater part of the year, in the thickets bordering small streams, very shy, but when alarmed flying only a short distance and endeavoring to conceal themselves. The plumage appears to be very slightly attached to the skin, and if you are so unfortunate as to wound a specimen, it is almost entirely lost in the struggles of the bird."

16. *Alcedo americana*, Gm. pl. Enl. 591.

Neighbourhood of Jalapa, all the year.

17. *Alcedo vestita*, Lesson. Traite, i. p. 242.

I give this name on the faith of labels attached to specimens in the Rivoli collection, M. Lesson's description being too short to enable me to identify the species satisfactorily.

18. *Cyanocorax ornatus*, (Lesson.) Rev. Zool. 1839, p. 41.

On the sides of the mountains all the year.

19. *Cyanocorax peruvianus*, (Gm.) Le Vaill. Ois. de Par. 46.

The specimen brought by Mr. Pease, agrees exactly with the description of *Garrulus luxuosus*, Lesson, Rev. Zool. 1839, p. 100, which is also Mexican. I can find no difference, however, between the present specimen and the young *C. peruvianus*, from South America.

Mr. Pease notes: "This species lives on the sides of the volcanoes all the year, Mexican name, *pepe verde*. Very similar in its habits to the other species brought by me, all of which are very numerous on the *tierra templada*, and the hills bounding the plains of Perote and Puebla on the east."

20. *Cyanocorax concolor*, Cassin. Proc. Acad. Nat. Sci., Philada., Feb. 1848.

The second specimen of this species which has fallen under my notice. It differs in no respect from my description, except, perhaps, that the feathers of the head are slightly elongated or subcrested.

Of this species Mr. Pease remarks: "Common on the hills bordering the plains of Puebla, about Pinal and the mountains skirting the valley of Mexico on the east; remains all the year; difference of the sexes in size alone. Iris light brown."

21. *Sturnella hypocrepis*, Wagler. Isis, 1832, p. 281.

A species much resembling the common *S. ludoviciana*, but differing in several important characters. It may easily be distinguished by its shorter and more pointed bill, and smaller size.

This species is well described in De Sagra's Cuba, under the name of *S. ludoviciana*.

22. *Icterus melanocephalus*, Wagler. Isis, 1829, p. 756.

Icterus Audubonii, Giraud. New species of N. A. birds, 1841, (folio edition.)

Common in the neighborhood of Jalapa, and also found on the *tierra caliente*; called by the Mexicans, *calandria iquimite*, from the name of the fruit which it feeds upon. Iris yellowish white.

23. *Icterus gularis*, (Licht.) Des Murs. Icon. Orn. i. pl. 9.

24. *Yphantes Baltimore*, (Linn.)

25. *Agelaius æneus*, (Licht.) Isis, 1827, p. 758.

Common in the vicinity of the Puente Nacional.

26. *Guiraca ludoviciana*, (Linn.)

Jalapa, in February, March, and April.

27. *Guiraca cœrulea*, (Linn.)

Jalapa.

28. *Guiraca melanocephala*, Swainson. Aud. Birds of Am. 373.

Common near Jalapa, in February, March, and April.

29. *Embernagra albinucha*, D'Orb. et La Fres. Rev. Zool. 1838, p. 165.

Jalapa: iris light brown.

30. *Embernagra brunnei-nucha*, La Fresnaye. Rev. Zool. 1839, p. 97.

Jalapa; iris brown.

31. *Saltator atriceps*, Lesson. Gervais. Atl. de Zool. pl. 28.

On the hills near Jalapa, in December, January and February. Iris light brown.

32. *Saltator rubicus*, Viell. T. flammiceps, Temm. Pl. col. 177.

On the hills at the foot of Perote, living in thickets.

33. *Tanagra vicarius*, Lesson. Cent. Zool. 68.

Iris light brown; on the hills at the foot of the volcanoes.

34. *Pyranga æstiva*, (Gm.)

Near Jalapa.

35. *Euphonia elegantissima*, Bonaparte. Du Bus, Esq. Orn. pl. 8.

Neighborhood of Jalapa, in February, March and April.

36. *Euphonia occipitalis*, Du Bus. Esqu. Orn. part iii, pl. 14.

It is the female of this beautiful species, which is described and figured by M. Du Bus. The male is as follows:

Above, glossy parrot-like green, which is also the colour of the throat to the breast, where it is terminated by a narrow crescent of glossy chesnut brown. Breast, middle of the abdomen and under tail coverts, yellow. Flanks green. Occipital spot and semicollar on the front of the neck pale blue.

According to Mr. Pease, this species is found among low thickets, in ravines, at the foot of the mountains, from October to February; not common. Mexican name, *ysabelita*.

37. *Tiaris olivaceus*, (Linn.) Lath. Gen. Hist. v. p. 340.

Emberiza olivacea, Linn. Tiaris pusillus, Swainson.

Near Jalapa; iris nearly black.

48. *Tiaris nitens*, (Linn.)

Near Quarterpec, not common: iris nearly black.

39. *Carduelis magellanicus*, (Viell.) Aud. Birds of America, 394.

40. *Pteroglossus prasinus*, Licht. Gould, Mon. pl. 18.

Neighbourhood of Jalapa, during April, May, and June; iris chocolate colour.

41. *Crotophaga sulcirostra*, Swainson. Gervais, Atlas de Zool., pl. 17.

Male and female very similar in plumage; from the Puente Nacional, where, according to Mr. Pease, this species is numerous, flying in flocks; iris white.

42. *Piaya cayana*, (Linn.)

Mr. Pease's specimens are precisely similar to specimens from South America.

43. *Picus varius*, Linn.

Common on the lower part of the *tierra caliente* all the year.

44. *Melanerpes formicivorus*, Swainson. Pl. col. 451.

Upper part of the *tierra caliente*, and as far as the foot of the mountains; feeds on high trees; iris white; sexes similar.

45. *Centurus subelegans*, (Bonaparte.)

On the *tierra caliente*, and the hills above, all the year; sexes similar.

[To be continued.]

The Committee on the following paper by Mr. Pease reported in favor of publication.

Observations on the Geology and Natural History of Mexico.

By Wm. H. Pease.

Having noticed among the published correspondence from the army in Mexico, but little information respecting the natural features of that country, I take the liberty of presenting to the Academy the result of a few hasty observations made on a part of the route from Vera Cruz to the city of Mexico. But few opportunities for scientific investigations were afforded to those connected with the army, on account of the active operations they were incessantly engaged in, from the time of leaving the coast until the return of the army. I was enabled, how-

A communication was presented from Dr. R. W. Gibbes, of Columbia, South Carolina, entitled "Monograph of the Fossil Squalidæ of the United States, continued," which was referred to the Committee on the former portion of the memoir.

Mr. Cassin read a paper describing a new Tanager from the Rio Negro, (*Tanagra nigro-aurita,*) which was referred to a Committee consisting of Drs. Wilson, Gambel and Bridges.

On leave granted, the Committee to whom was referred Mr. Henry C. Lea's catalogue of Tertiary Fossils of the U. S., reported in favor of publication in the Proceedings.

October 10*th,* 1848.

Vice President MORTON in the Chair.

A communication was read from Prof. Walter R. Johnson, Secretary of the American Association for the advancement of Science, dated Philadelphia, September 25th, 1848, returning the acknowledgements of that body for "the liberal and handsome manner in which the numerous and splendid collections of the Academy were offered for the inspection of the members."

A letter was read from Francis S. Holmes, Esq., of Charleston, S. C., dated October 2d, 1848, acknowledging the receipt of his notice of election as a Correspondent.

Also a letter from Mr. George B. Allinson, dated October 3d, 1848, accompanying his donation of minerals, this evening announced.

October 17*th,* 1848.

Mr. VAUX in the Chair.

Letters were read :—

From the Secretary of the Lyceum of Natural History of New York, dated October 10th, 1848, acknowledging the receipt of Nos. 1 and 2, New Series of Journal of the Academy :—

From Dr. Bennet Dowler, dated New Orleans, October 3d, 1848, and from Dr. R. M. S. Jackson, dated Blairsville, Pennsylvania, October 7th, 1848, severally acknowledging the receipt of their notices of election as Correspondents :—

From John A. Guex, dated New York, October 15, 1848, announcing that he had forwarded for this Society recent Nos. of the Annals of the Royal Agricultural Society of Lyons.

October 24*th,* 1848.

Dr. BRIDGES in the Chair.

A letter was read from Mr. B. M. Norman, of New Orleans, dated October 6th, 1848, announcing the late decease of Dr. William M.

Carpenter of that city, a correspondent of this Institution, and stating that at the request of the latter, he had transmitted for the cabinet of the Academy, the specimens of Tapir fossils, described and figured by Dr. Carpenter in Silliman's Journal, New Series, No. 2.

A letter was read from Prof. Walter R. Johnson, addressed to Dr. Morton, dated Washington, October 18, 1848, recommending to the Academy to memorialize Congress on the advantage and importance of an examination into the Natural History of the Southern portion of Chili, and of adding one or more naturalists to the astronomical expedition now fitting out by the U. S. Government for that region, under the command of Lieut. J. M. Gilliss U. S. N. Referred to a Committee consisting of Dr. Morton, Dr. Bridges and Mr. Vaux.

Mr. Cassin read a communication from Mr. Wm. S. Pease, intended for publication, describing the geological features of the district of country lying between Puebla and the Gulf of Mexico, with some remarks on its Natural History. Referred to Mr. Cassin, Dr. Townsend, and Mr. Vaux.

Mr. Cassin also presented a Catalogue of Birds, collected by Mr. Wm. S. Pease, during the march of the Army of the United States from Vera Cruz to the city of Mexico. Referred to Drs. Townsend, Gambel and Woodhouse.

October 31*st*, 1848.

Vice President MORTON in the Chair.

The Committee on Mr. Cassin's description of a new Tanager, reported in favor of publication.

Description of a new Tanagra, in the Collection of the Academy of Natural Sciences of Philadelphia.

BY JOHN CASSIN.

TANAGRA *nigro-aurita*, nobis.

Superior and point of the inferior mandible, black,—other portions of the inferior mandible, yellow.

Head above, chin and throat, ending in a point on the breast, crimson.

A broad stripe from the base of the bill, including the eye and ear, glossy black. This stripe completely separates the crimson of the upper part of the head from that of the throat.

Entire upper surface of the body, except the head, black, which is also the color of the wings and tail. Under parts of the body from the breast, white.

Legs, in the dried skin, nearly black.

Total length of skin, from tip of bill to end of tail, about 6¼ inches; wing 3 1-10th; tail 2 8-10th inches.

Hab. Rio Negro, South America.

This species very much resembles both *Tanagra gularis*, Linn., and *capitata*, D'Orbigny, from either of which it may be distinguished by its black nares and ears, and also by the absence of purple on the breast. In the species now described, of which I have seen six specimens, the throat and breast are of the same color, exactly as the upper part of the head, without the slightest appearance of the purple into which the crimson changes in both the species mentioned. The legs, also, in the present species, are nearly or quite black, in which respect they differ from those of *T. capitata*, which are yellow.

A specimen of this remarkable species was obtained in Europe by Mr. Edward Wilson, to whose valuable additions to the collection of the Academy I have frequently alluded. I have also seen other specimens, two of which I procured from a collection, brought from the Rio Negro by Mr. John Wülf, an intelligent merchant, formerly resident at Parà.

The Committee on the following communication by Dr. Hallowell, reported in favor of publication :—

Notes of the post-mortem appearances observed in a Cynocephalus porcarius, which died in the Menagerie at Philadelphia.

BY EDWARD HALLOWELL, M. D.

The right lung is greatly enlarged and tuberculous ; the tuberculous matter exists in the form of infiltration, and is disseminated in masses leaving intervening spaces of hepatized lung of a brick-red color, firm and resisting to the touch ; the greater portion of the lower lobe of this lung, as well as a very considerable part of the upper, is occupied with this matter ; the opposite lung is comparatively healthy, a few tuberculous deposits being observed at its root and apex, and also in the lower lobe, which is somewhat congested. Several of the bronchial glands are enlarged, one of them measuring fourteen lines in length. *Pericardium* pale, containing no serosity ; coronary veins much enlarged. *Abdomen.* Mucous membrane of œsophagus pale, apparently healthy ; the *liver* is of a dark-chocolate color, and has four lobes ; the second of these counting from the right is the largest ; the liver measures five and a half inches transversely, three inches antero-posteriorly, and one and a quarter in depth ; no tubercles are observed in it ; the *gall-bladder*, which lies in a sulcus upon the under surface of the largest lobe is moderately distended with bile, tinging its parietes a light-green color ; the *spleen* measures three and three quarter inches in length by one and a half in breadth in its broadest part ; it is elongated at its right extremity, tapering almost to a point ; the opposite extremity is rounded, the entire organ presenting a somewhat triangular form ; no tubercles are observed in any part of it ; its tissue is of a deep-purple color, almost black from congestion : the stomach measures six inches transversely, by three and a half from the entrance of the œsophagus to its greater curvature ; its muscular fibres are very apparent ; the œsophagus enters it about the middle of the lesser curvature ; the mucous membrane of the stomach is of a brownish-red color near the pylorus, elsewhere of a pale onion tint ; no crypts are observable ; the *pancreas* measures three inches transversley, one and a quarter in its greatest breadth near its head ; the *large intestine*, including the cœcum, measures two feet nine and a half inches (Fr.) in length; the cœcum measures two inches five lines in length; the mucous membrane of the large intestine is of a greenish olive tint throughout; the isolated crypts are very distinct; the small intestine measures six feet two inches; the mucous membrane is apparently healthy, of a pale onion tint slightly reddened in portions; the isolated glands are very numerous near the upper extremity of the duodenum; there are no valvulæ conniventes; eight plaques of Peyer are counted in the ileum; the largest is about one and a half inches in length; the mesenteric glands are healthy; the *kidneys* are of a brick-red color, tissue healthy; *bladder* not examined.

The Committee to whom was referred the following catalogue of Mexican Birds, reported in favor of publication.

Catalogue of Birds collected by Mr. Wm. S. Pease, during the march of the Army of the United States from Vera Cruz to the City of Mexico.

By John Cassin.

Upon publicity being given to the fact that the Department of War of the United States of America intended sending an expedition, to consist of both Naval and Military forces, against the city of Vera Cruz, Mr. Wm. S. Pease, Member of the Lyceum of Natural History of New York, and Correspondent of the Academy of Natural Sciences of Philadelphia, proposed to embrace an opportunity which would thus probably offer, of his accompanying the military force into Mexico.

Having succeeded in effecting a suitable arrangement, Mr. Pease joined the army under General Scott, at Vera Cruz, and continued with it until the final evacuation of the country.

The facilities for collecting and for observation possessed by Mr. Pease were necessarily of a restricted character, resulting from the position of the army in a hostile country, and particularly so during the marches, when it was constantly attended by bands of armed inhabitants, or guerillas, who hovered in its vicinity for the purpose of committing depredations upon persons who ventured away from the main body. Notwithstanding all disadvantages, however, Mr. Pease made very interesting collections of birds, insects and other productions of the country.

Mr. Pease represents himself as particularly indebted to Col. G. W. Hughes of the 1st Regiment Maryland infantry, and to Otis Hoyt, M. D., Surgeon of the Massachusetts volunteers, and medical director of the general hospital at Jalapa, whose kindness and encouraging treatment of Mr. Pease, are honorable to those gentlemen as friends of science, and worthy of the character of American officers.

1. *Spizaëtus tyrannus*, (De Wied) Pl. col. 73.

From the neighborhood of Perote;—an adult female.

2. *Herpetotheres cachinnans*, (Linn.) Viell. Gal. 19.

3. *Falco sparverius*, Linn. Aud. Birds of Am. pl. 42.

Mr. Pease observes: "Only found about the upper part of the *tierra templada*, very common."

4. *Astur nitidus*, (Lath.) Pl. col. 87.

5. *Micraster guerilla*, nobis (n. s.)

Adult ♀ ?.—Entire upper surface of the body, head, wings and tail, hair brown, a shade darker on the head. Feathers on the cheek and jaw, brown, which color forms a partial collar on the front of the neck.

Throat, fore neck, abdomen and under tail coverts, white, with a few brown spots or bars on the latter.

Neck encircled by a narrow band of white, all the feathers of which are tipped or edged with brown.

Breast, flanks and thighs, white, every feather having about three bands of the same brown as the back.

Edge of the wing at the flexure and inner wing coverts, white; many of the feathers with lunated spots of brown. All the quill feathers with broad white bars on their inner webs; fifth primary longest.

Upper tail coverts spotted with white. Tail with four or five narrow white bars, and tipped with white.

Total length of skin, from tip of bill to end of tail, about 15 inches, wing 7, tail 6½ inches.

Young ♀ ?—Under parts tinged with fulvous or buff. Breast, flanks and thighs with the bands much narrower, and the throat with a more decided brown collar.

Feathers of the back and wing coverts, with ferruginous and white spots. Upper tail coverts with the white markings more numerous.

Superciliary feathers white, tipped with brown.

Total length of skin, from tip of bill to end of tail, about 14 inches, wing 6½, tail 6 inches.

Hab. Near Jalapa, Mexico.

This species considerably resembles some stages of plumage of the *M. xanthothorax* (Cuv.) and the *M. leucauchen*, (Temm.) Pl. col. 92, 306, (which are probably identical.) It may readily be distinguished from either of those by the entire absence of the rufous chesnut color of the breast and back, and by the much broader, and lesser number of the bands upon the under surface of the body.

In the species now described, the character of the white markings of the tail is also different from that of *M. xanthothorax* or of *leucauchen*, and more approaches that of the larger species, *M. brachyterus*, (Cuv.) These markings are broad and truncated at the shaft of the feather, instead of ending acutely and forming triangles, as in those species.

Two specimens (♂ and ♀. ?) were brought by Mr. Pease; a third specimen of the same species, in more adult plumage, was previously received from Paris, in the collection made by Mr. Edward Wilson.

6. *Accipiter fuscus*, (Gm.) Falco velox, Wilson, Am. Orn. 45, 46.

Near Jalapa all the year. The two specimens (nearly adult and young ♀) brought by Mr. Pease, are perfectly similar to others obtained in the vicinity of this city. In both specimens the tail is quite even, in which respect they differ from Mr. Swainson's description of *A. Mexicanus*.

7. *Accipiter Cooperi*, (Bonap.) Aud. Birds Am. pl. 36, 141.

A young male from near Jalapa.

Dr. Kaup, in the Isis, 1847, page 178, and Mr. Gray, in List of specimens of Birds in the British Museum, give *Accipiter Cooperi* (Bonap.) as a synonyme for

Accipiter pileatus (De Wied) Pl. col. 205. This is not correct, as may readily be ascertained by reference to numerous specimens of both those species in the collection of this Academy.

In fact but a small degree of resemblance exists between any age or sex of the two species, so far as I have seen. The *A. Cooperi*, is much the larger, nor have I ever seen a specimen of this species assuming plumage at all approaching that represented in Pl. col. 205.

8. *Circus cyaneus*, (Linn.)

Young birds from near Jalapa.

9. *Ephialtes atricapilla*, (Natt.) Pl. col. 145.

10. *Syrnium* ——— ?

A species to which I am not at present prepared to attach a specific name. I have reason to suppose that it is one of the species which Mr. Gray has named in his List of the Rapacious birds in the British Museum, of which no description has come under my notice, if published.

11. *Nyctidromus Derbyanus*, Gould. Icon. Av. ii. pl. 2.

A young bird from the neighbourhood of Jalapa, where it lives all the year.

12. *Momotus brasiliensis*, (Lath.)

Near Jalapa, found in thickets, iris red.

In the specimen brought by Mr. Pease, and also in two others from Mexico in the Rivoli collection, the crown of the head is much lighter coloured than is usual in South American specimens.

13. *Trogon mexicanus*, Swainson, Gould. Mon. Pl. 2.

14. *Trogon exalapensis*, Du Bus, Esquisses Orn. I. pl. 2.

Two males from the neighbourhood of Jalapa.

15. *Trogon ambiguus ?* Gould. Mon. pl. 4.

A young bird, sufficiently ambiguous at least to be referred to this species. Of these three species, Mr. Pease has the following note: "Live on the *tierra templada* the greater part of the year, in the thickets bordering small streams, very shy, but when alarmed flying only a short distance and endeavoring to conceal themselves. The plumage appears to be very slightly attached to the skin, and if you are so unfortunate as to wound a specimen, it is almost entirely lost in the struggles of the bird."

16. *Alcedo americana*, Gm. pl. Enl. 591.

Neighbourhood of Jalapa, all the year.

17. *Alcedo vestita*, Lesson. Traite, i. p. 242.

I give this name on the faith of labels attached to specimens in the Rivoli collection, M. Lesson's description being too short to enable me to identify the species satisfactorily.

18. *Cyanocorax ornatus*, (Lesson.) Rev. Zool. 1839, p. 41.

On the sides of the mountains all the year.

19. *Cyanocorax peruvianus*, (Gm.) Le Vaill. Ois. de Par. 46.

The specimen brought by Mr. Pease, agrees exactly with the description of *Garrulus luxuosus*, Lesson, Rev. Zool. 1839, p. 100, which is also Mexican. I can find no difference, however, between the present specimen and the young *C. peruvianus*, from South America.

Mr. Pease notes: "This species lives on the sides of the volcanoes all the year, Mexican name, *pepe verde.* Very similar in its habits to the other species brought by me, all of which are very numerous on the *tierra templada*, and the hills bounding the plains of Perote and Puebla on the east."

20. *Cyanocorax concolor*, Cassin. Proc. Acad. Nat. Sci., Philada., Feb. 1848.

The second specimen of this species which has fallen under my notice. It differs in no respect from my description, except, perhaps, that the feathers of the head are slightly elongated or subcrested.

Of this species Mr. Pease remarks: "Common on the hills bordering the plains of Puebla, about Pinal and the mountains skirting the valley of Mexico on the east; remains all the year; difference of the sexes in size alone. Iris light brown."

21. *Sturnella hypocrepis*, Wagler. Isis, 1832, p. 281.

A species much resembling the common *S. ludoviciana*, but differing in several important characters. It may easily be distinguished by its shorter and more pointed bill, and smaller size.

This species is well described in De Sagra's Cuba, under the name of *S. ludoviciana.*

22. *Icterus melanocephalus*, Wagler. Isis, 1829, p. 756.

Icterus Audubonii, Giraud. New species of N. A. birds, 1841, (folio edition.)

Common in the neighborhood of Jalapa, and also found on the *tierra caliente;* called by the Mexicans, *calandria iquimite*, from the name of the fruit which it feeds upon. Iris yellowish white.

23. *Icterus gularis*, (Licht.) Des Murs. Icon. Orn. i. pl. 9.

24. *Yphantes Baltimore*, (Linn.)

25. *Agelaius æneus*, (Licht.) Isis, 1827, p. 758.

Common in the vicinity of the Puente Nacional.

26. *Guiraca ludoviciana*, (Linn.)

Jalapa, in February, March, and April.

27. *Guiraca cœrulea*, (Linn.)

Jalapa.

28. *Guiraca melanocephala*, Swainson. Aud. Birds of Am. 373.

Common near Jalapa, in February, March, and April.

29. *Embernagra albinucha*, D'Orb. et La Fres. Rev. Zool. 1838, p. 165.

Jalapa: iris light brown.

30. *Embernagra brunnei-nucha*, La Fresnaye. Rev. Zool. 1839, p. 97.

Jalapa; iris brown.

31. *Saltator atriceps*, Lesson. Gervais. Atl. de Zool. pl. 28.

On the hills near Jalapa, in December, January and February. Iris light brown.

32. *Saltator rubicus*, Viell. T. flammiceps, Temm. Pl. col. 177.

On the hills at the foot of Perote, living in thickets.

33. *Tanagra vicarius*, Lesson. Cent. Zool. 68.

Iris light brown; on the hills at the foot of the volcanoes.

34. *Pyranga æstiva*, (Gm.)

Near Jalapa.

35. *Euphonia elegantissima*, Bonaparte. Du Bus, Esq. Orn. pl. 8.

Neighborhood of Jalapa, in February, March and April.

36. *Euphonia occipitalis*, Du Bus. Esqu. Orn. part iii, pl. 14.

It is the female of this beautiful species, which is described and figured by M. Du Bus. The male is as follows:

Above, glossy parrot-like green, which is also the colour of the throat to the breast, where it is terminated by a narrow crescent of glossy chesnut brown. Breast, middle of the abdomen and under tail coverts, yellow. Flanks green. Occipital spot and semicollar on the front of the neck pale blue.

According to Mr. Pease, this species is found among low thickets, in ravines, at the foot of the mountains, from October to February; not common. Mexican name, *ysabelita*.

37. *Tiaris olivaceus*, (Linn.) Lath. Gen. Hist. v. p. 340.

Emberiza olivacea, Linn. Tiaris pusillus, Swainson.

Near Jalapa; iris nearly black.

48. *Tiaris nitens*, (Linn.)

Near Quarterpec, not common: iris nearly black.

39. *Carduelis magellanicus*, (Viell.) Aud. Birds of America, 394.

40. *Pteroglossus prasinus*, Licht. Gould, Mon. pl. 18.

Neighbourhood of Jalapa, during April, May, and June; iris chocolate colour.

41. *Crotophaga sulcirostra*, Swainson. Gervais, Atlas de Zool., pl. 17.

Male and female very similar in plumage; from the Puente Nacional, where, according to Mr. Pease, this species is numerous, flying in flocks; iris white.

42. *Piaya cayana*, (Linn.)

Mr. Pease's specimens are precisely similar to specimens from South America.

43. *Picus varius*, Linn.

Common on the lower part of the *tierra caliente* all the year.

44. *Melanerpes formicivorus*, Swainson. Pl. col. 451.

Upper part of the *tierra caliente*, and as far as the foot of the mountains; feeds on high trees; iris white; sexes similar.

45. *Centurus subelegans*, (Bonaparte.)

On the *tierra caliente*, and the hills above, all the year; sexes similar.

[To be continued.]

The Committee on the following paper by Mr. Pease reported in favor of publication.

Observations on the Geology and Natural History of Mexico.

By Wm. H. Pease.

Having noticed among the published correspondence from the army in Mexico, but little information respecting the natural features of that country, I take the liberty of presenting to the Academy the result of a few hasty observations made on a part of the route from Vera Cruz to the city of Mexico. But few opportunities for scientific investigations were afforded to those connected with the army, on account of the active operations they were incessantly engaged in, from the time of leaving the coast until the return of the army. I was enabled, however, principally in company with scouting parties, to visit that part of the country between the range of volcanoes, bounding the plains of Perote and Puebla on the east, and the Gulph of Mexico, comprising the greater part of the State of Vera Cruz, and to make some collections in Natural History.

The general outlines of the country I presume it is unnecessary for me to detail. The plains of Cuetlachlan, or the *tierra caliente*, as they are more usually called, comprise that region of country bordering the Gulph of Mexico. They are about twenty-five miles in width, extending back to the Plan del Rio by a gradual ascent of thirty feet per mile, with but few elevations or depressions, except at the river Antigua, and other small streams which pass through them in a north easterly direction. Beyond the Plan del Rio the ascent increases over a regular succession of hills and plains, until you reach the foot of the range of mountains in which the peaks of Orizaba, Perote and others are situated. This range forms the rim or eastern boundary of the plains of Anahuac, which are more commonly known as the *tierra templada*, and are about thirty-five miles in width. The sides and top of this mountain range are called the *terra fria*, immediately beyond which lie the great table lands of Mexico.

The table lands extend, with little or no variation in their general level, to the Cordilleras bordering the Pacific Ocean, though they are divided into several plains by ranges of volcanoes and porphyritic rocks.

The *tierra caliente* is bordered on the Gulph of Mexico by low sand hills, from four to six miles in width, not bare as has been represented, but covered with a thick chapparel, or thicket of Cacti and thorn bushes, to within reach of the water. Great numbers of fresh water and land shells are found on these hills and on the beach, thrown up from the Gulph, which may be referred to a living species.

After passing these hills a few miles, I noticed at one locality a layer of limestone. It is covered by a coarse conglomerate of volcanic and porphyritic rocks, which extends over the whole upper part of the *tierra caliente*, rendering the surface rough and stony. At the Puenta Nacional it is exposed to the depth of two hundred feet, interstratified irregularly with veins of fine sandstone. Deep gullies are worn through it to the rivers, by the drainage of the plains during the wet season. The rivers are the only source of irrigation, receiving no supplies in their course from the mountains to the coast.

The greater part of the plains is covered with a dense growth of vegetation, so thick that it would seem almost impossible for the soil to support more, and the trees and bushes are loaded with an innumerable variety of parasitical plants and vines, interlacing and binding them together, in such a manner as to render them absolutely impenetrable. On other parts, particularly between the conglomerate and the coast, the chapparel is more open, dotted with clumps of low dwarfish trees and Cacti, and affords grazing to herds of half wild cattle, in which the property of the inhabitants principally consists. To the south of Vera Cruz the cultivation of cotton has been introduced; it is of white fine quality, but perhaps for want of proper cultivation the staple is very short, so that when worked it requires to be mixed with other varieties.

The inhabitants live mostly on the small bottom lands of the rivers, their crops consisting of corn, chili and frijoles. They are a puny and sickly people, being subject to intermittent and typhoid fevers, during the months after the close of the wet season. Though the temperature at the Puenta Nacional, in the months of September, October and November, averaged 80° at 3 P. M. with little variation, the atmosphere was so loaded with moisture that it was impossible to keep our fighting tools free from rust for twenty-four hours at a time, protect them as we might.

The animals met with at the Puenta Nacional and on the tierra caliente, are for the greater part common to Texas and the north; the common deer is abundant, though of small size; the red fox, the prairie wolf, and the spotted tiger cat are frequently met with, and the Puma also, though more frequently in the mountains above. Reptiles are exceedingly numerous, though of few species. The royal Iguano, as it is called, is found in the cliffs bordering the river Antigua, and grows to a very large size; one killed by a Mexican measuring nine feet in length. The flesh of this species, as well as that of others, is considered quite a delicacy by the inhabitants. I observed a curious habit of a species of lizard, which has not been noticed before to my knowledge; it is that of passing over the water in an erect position, resting on its hinder parts, and propelling itself by its hind feet, its tail lying horizontally on the water, acting as a rudder. In the San Juan and Antigua rivers I noticed an alligator which appeared to be different from our common species; the young, a specimen of which I caught, is entirely black, without the usual yellow markings on its back.

Land and fresh water shells are scarce; the beds of the streams being very stony; nearer the coast, however, they may perhaps be more abundant. After passing the tierra caliente, the ascent increases over the tierra templada, as above stated, to the foot of the mountains. The whole of the surface of this part of the country is much broken by low ranges of volcanic hills and deep ravines or barrancas, as they are called, of two to five hundred feet in depth, which run, commonly, at right angles from the mountain chain above. The city of Jalapa derives its name from that of an ancient Indian village a few leagues distant, and signifies "built among barrancas."

Most of the hills are of volcanic formation, though they are not all so, as I have seen stated. The limestone shows itself in the valleys at the foot of the mountains, and in the barrancas, when of sufficient width. It is, of course, very much altered from its connection with the volcanic rock, being uncrystallized and whitened. It is not fossiliferous, and, as far as I noticed, unstratified. At Quarterpec, a few leagues south of Jalapa, and at other places, it is burnt by the Indians, and the lime is sold in the neighbouring towns and cities.

The soil of the valleys is rich, and under cultivation produces during the whole year, rice, coffee, tobacco, sugar cane, corn and other vegetable productions, fruit, &c., of both tropical and temperate climes, in great abundance. The average of temperature I should place lower than Humboldt. During the months of January and February, there were several nights of severe frosts in the neighborhood of Jalapa and below, which stripped the trees on the hills of their foliage, but I was told it was of very unusual occurrence.

Every one who has visited this country must agree with Humboldt, that the region comprising the tierra templada and the eastern slope of the mountains above, is "one of the most beautiful and picturesque in the world." No other part of the world, perhaps, can present scenery of such sublime and picturesque beauty. When travelling over the rough and barren hills, strewn with volcanic rocks, the scene is suddenly changed by coming upon the edge of a barranca or ravine, its bottom lands several hundred feet below you, highly cultivated in fields of sugar cane, corn, &c., dotted with the straw-thatched cottages of the Indians, and presenting a most perfect panorama or picture of nature's own painting, enclosed, as it were, in a frame of black and jagged rocks, which form its perpendicular sides, without a vestige of vegetation growing upon them. Far off below, lays stretched out the tierra caliente, having the appearance of an immense park, bounded on the horizon by the Gulf; and yet, elevated as your position seems to be, on turning to look in the opposite direction, Orizaba, with its silvery cap of eternal snow, and the base and rocky peak of Perote, still stand above you eight or nine thousand feet.

In addition to the animals on the tierra caliente, I noticed the raccoon, the opossum, the bassaris astuta, or ring-tailed weasel, as it is called by the Mexicans, and several species of deer. I noticed also a porcupine, which struck me as different from the common species. The puma and jaguar are also met with in the mountains.

The mammalia of this part of Mexico seem to be identical with, or nearly allied to, more northern species, while the birds for the greater part are found also much farther south. Lizards are less numerous, but snakes more so than on the tierra caliente. The plants I should think more characteristic than either mammalia or birds, and present a rich field for investigation.

The two species of Jalapa root are collected in small quantities, only on the sides of the mountains by the Indians, the greater part exported being brought from the north and west of the city of Mexico.

In the neighbourhood of Jalapa, and on the road passing over the mountains, I noticed several beds and hills of sand, in some of which are deposits of the sulphate of lime, finely crystallized in the form of sand. I was told by the Mexicans that they had dug up here young clams, perhaps cyclas. I mention this fact in confirmation of my opinion that the plains of Anahuac above, or of Perote and Puebla, as they may be called, have been drained by one of the many revolutions (geological, not political,) which this country has passed through.

The eastern part of the plains above, for the distance of twelve or fifteen miles, is sandy; beyond are salt beds and soda. In many localities, at the depth of ten or twelve feet, I saw fossil fresh water shells of the genera Planorbis, Lymnea, Physa, and others, which it is reasonable to suppose once lived at the bottom of lakes which covered these plains, as well as that of the valley of Mexico.

The volcanic mountains which form the boundaries to the plains, are flanked by ranges of limestone hills, similar in character to those below on the tierra templada. Undoubtedly the range which bounds the plains of Anahuac to the east, is very rich in mineral treasure, as specimens of silver ore are frequently brought in by the Indians, but they, like those of Peru, conceal their knowledge of the localities with the utmost care. About three leagues from Perote I saw a vein of sulphuret of silver three feet in width, associated with blende and sulphate of copper.

Catalogue of the Tertiary Testacea of the United States.

By Henry C. Lea.

The following list is intended as a mere mechanical assistance to the student of our Tertiary Testacea. The descriptions of these species are scattered through the Transactions of learned Societies, Scientific Journals, Pamphlets, and other publications difficult of access, presenting a serious obstacle to any one endeavoring to identify specimens. Labouring under this difficulty myself, I prepared this catalogue, and from my experience of its convenience, I presume that it may be found of assistance to others. I have endeavoured to introduce the recent shells which have been observed in a fossil state, as far as I have seen them noted, but as no regular record has been kept of them, I fear that in that particular, especially, this list may be found imperfect. I have not attempted to determine the conflicting synonymes, either generic or specific. but have merely given the names with a reference to the publications in which they are alluded to or described.

REFERENCES.

Jour. Acad.—Journal of the Academy of Natural Sciences of Philadelphia.
Pro. Acad.—Proceedings " " " " "
Sil. Jour.—Silliman's American Journal of Science and Arts.
" " N. S. " " " " " New Series, (commenced in 1846.)
Trans. Phil.—Transactions of the American Philosophical Society.
Trans. Geol —Transactions of the Geological Society of Pennsylvania.
Bost. Jour.—Boston Journal of Natural History.
Nat. Inst.—Bulletin of the National Institution.
Cont. Geol.—Contributions to Geology, by Isaac Lea.
Tert. Foss.—Fossil Shells of the Tertiary Formations of North America, by T. A. Conrad.
Med. Tert.—Fossil Shells from the Medial Tertiary of the United States, by T. A. Conrad.

CATALOGUE.

Acteon.

A. Andersoni, Con., Pro. Acad. iii.
angulatus, H C. Lea, Trans. Phil. ix.
costellatus, Con., Tert. Foss.
elevatus. Lea, Cont. Geol.
glans., H. C. Lea, Trans. Phil. ix.
globosus, H. C. Lea, " "
granulatus, H. C. Lea, "
idoneus, Con., Tert. Foss.
lævis, H. C. Lea, Sil. Journ. xl.
lineatus, Lea, Cont. Geol.
magnoplicatus, H. C. Lea, Sil. Journal, xl.
melanellus, Lea, Cont. Geol.
melanoides, Con., Jour. Acad. vi.
milium, H. C. Lea, Trans. Phil. ix.
nitens, H C. Lea, " " "
novellus, Con., Jour. Acad. vii.
ovoides, Con., " " vi.
pomilius, Con., Tert. Foss.
punctatus, Lea, Cont. Geol.
A. pygmæus, Lea, Cont. Geol.
sculptus, H. C. Lea, Trans. Phil. ix.
simplex, H. C. Lea, " "
striatus, Lea, Cont. Geol.
turbinatus, H. C. Lea, Trans. Phil. ix.

Aligena.

A. lævis, H. C. Lea, Trans. Phil. ix.
striata, H. C. Lea, " "

Amphidesma.

A. æquale, Say, Sil Jour. xli.
æquatum, Con., Pro. Acad. i.
bellastriatum, Con., Nat. Inst. No. 2.
carinatum, Con., Jour. Acad. vi.
constrictum, Con., Sil. Jour. xli.
inæquale, Say, Jour. Acad. vii.
linosum, Con., Tert. Foss.
Mississippiense, Con., Pro. Acad. iii.
nuculoide, Con., Sil. Jour. xli.
protextum, Con., " "
subobliquum, " " "

A. subovatum, Say, Jour. Acad. iv.
subreflexum, Con., “ vii.
tellinula, Con., Sil. Jour. i. N. S.
transversum, Say, “ xxviii.

AMPULLARIA.

A. perovata, Con., Pro. Acad. iii.

ANATINA.

A. antiqua, Con , Jour. Acad. vii.
Claibornensis, Lea, Cont. Geol.
tellinoides, H. C. Lea, Trans. Phil. ix.

ANCILLARIA.

A. altilis, Con., Tert. Foss.
lymneoides, Con., “
scamba, Con. “ “
staminea, Con., “
subglobosa, Con., “
tenera, Con., Jour. Acad. vii.

ANOLAX.

A. gigantea, Lea, Cont. Geol.
plicata, Lea, “ “

ANGUINELLA.

A. Virginiana, Con., Med. Tert.
ornata, Con., Sil. Jour. i. N. S.

ANOMIA.

A. ephippium, Linn., Jour. Acad. vii.
jugosa, Con., Pro. Acad. i.
Ruffini, Con., “ “

ARCA.

A. æquicostata, Con., Med. Tert.
arata, Say, Jour. Acad. iv.
brevidesma, Con., Med. Tert.
buccula, Con., “ “
cælata, Con., “ “
callipleura, Con., “ “
centenaria, Say, Jour. Acad. iv.
cuculloides, Con., Tert. Foss.
depleura, Con., Nat. Inst. No. 2.
idonea, Con., Tert. Foss.
improcera, Con., Med. Tert.
incile, Say, Jour. Acad. iv.
lienosa, Say, Sil. Jour. xli.
limula, Con., Tert. Foss.
lineolata, Con., Med. Tert.
maxillata, Con., Jour. Acad. vi.
Mississippiensis, Con., Pro. Acad. iii.
pexata, Say, Sil. Jour. xxiii.
plicatura, Con., Med. Tert.
ponderosa, Say, Sil. Jour. xxviii.
propatula, Con., Med. Tert.
protracta, Rogers, Trans. Phil. v.
rhomboidella, Lea, Cont. Geol.
scalaris, Con., Pro. Acad. i.
staminea, Say. Med. Tert.
stillicidium, Con., Tert. Foss.
subrostrata, Con., Jour. Acad. viii.
subsinuata, Con., Med. Tert.
transversa, Say, Sil. Jour. xxviii.
triquetra, Con., Pro. Acad. i.

ARTEMIS.

A. acetabulum, Con., Tert. Foss.
concentrica, Born, Jour. Acad. vii.
elegans, Con., Pro. Acad. i.

ASTARTE.

A. abbreviata, Con., Med. Tert.
arata, Con., “ “
callosa, Con., Tert. Foss.
Coheni, Con., Med. Tert.
concentrica, Con., Jour. Acad. viii.
cuneiformis, Con., Med. Tert.
exaltata, Con., Jour. Acad. viii.
lineolata, H. C. Lea, Trans., Phil. ix.
lunulata, Con., Jour. Acad. vii.
lyrata, Sil. Jour. xli.
minor, Lea, Cont. Geol.
minutissima, Lea, “
Nicklinii, Lea, “
obruta, Con., Jour. Acad. vii.
parva, Lea, Cont. Geol.
perplana, Con. Med. Tert.
planulata, Con , Nat. Inst. No. 2.
proruta, Con., Tert. Foss.
radians, Con., Med. Tert.
recurva, Lea, Cont. Geol.
sulcata, Lea, “ “
symmetrica, Con., Jour. Acad. vii.
tellinoides, Con., Sil. Jour xxiii.
undulata, Say, Jour. Acad. iv.
ungulina, Con., Sil. Jour. xxiii.
varians, Con., Jour. Acad. viii.
vacina, Say, Jour. Acad. vii.

AVICULA.

A. argentea, Con., Pro. Acad. iii.
Clairbornensis, Lea, Cont. Geol.
limula, Con., Tert. Foss.
multangula, H. C. Lea, Trans. Phil. ix.
trigona, Lam., Nat. Inst. No. 2.

BALANUS.

B. Finchii, Lea, Cont. Geol.
humilis, Con., Sil. Jour. ii. N. S.
incile, Con., Nat. Inst. No. 2.
ovularis, Lam., Sil. Jour. xli.
peregrinus, Morton, Jour. Acad. vii.
Proteus, Con., “ “ vii.
tintinnabulum, (?) Lam. “ vi.

BONELLIA.

B. lineata, Con., Jour. Acad. viii.
terebellata, Con., Nat. Inst. No. 2.

BUCCINUM.

B. altile, Con., Tert. Foss.
amœnum, Con., “
aratum, Say, Jour. Acad. iv.
avarum, Con., Sil. Jour. xxviii.
bilix, Con., Pro. Acad. i.
filicatum, Con., “ “
fossulatum, Con., “
frumentum, H. C. Lea, Trans. Phil. ix.

B. harpuloide, Con., Pro. Acad. i.
integrum, Con., Nat. Inst. No. 2.
interruptum, Con., Sil. Jour. xli.
laqueatum, Con., Tert. Foss.
lienosum, Con., Pro. Acad. i.
lunatum, Say, Sil Jour. xli.
Mississippiense, Con., Pro. Acad. iii.
multirugatum, Con., Sil. Jour. xli.
obsoletum, Say, " "
quadratum, Con., Nat. Inst. No. 2.
quadrulatum, H. C. Lea, Trans. Phil. ix.
parvum, H. C. Lea, Sil. Jour. xl.
perlatum, Con., Tert. Foss.
porcinum, Say, Jour. Acad. iv.
præruptum, Con , Pro. Acad. i.
prorsum, Con., Tert. Foss.
protractum, Con., Pro. Acad. i.
pusillum, H. C. Lea, Trans. Phil. ix.
sagenum, Con., Tert. Foss.
Sowerbii, Lea. Cont. Geol.
sexdentatum, Con., Pro. Acad. i.
trivittatum. Say, Jour. Acad. vi.
Tuomeyi, H.C. Lea, Trans. Phil. ix.

Busimus.

B. Floridanus, Con., Sil. Jour. ii. N. S.

Bulla.

B. acuminata, Sow., Jour. Acad. vi.
crassiplica, Con., Pro. Acad. iii.
cylindrus, H. C. Lea, Trans. Phil. ix.
Dekayi, Lea, Cont. Geol.
occulta, Mighels, Bost. Jour. iv.
petrosa, Con., Sil. Jour. ii. N. S.
St. Hillairii, Lea, Cont. Geol.
subpissa, Con., Pro. Acad. iii.

Bullina.

B. canaliculata, Say, Sil. Jour. xxviii.

Byssoarca.

B. cuculloides, Con., Sil. Jour. i. N. S.
lima, Con., Pro. Acad. iii.
Marilandica, Con., Med. Tert.
Mississippiensis, Con., Pro. Acad. iii.
protracta, Con., " " "

Byssomya.

B. petricoloides, Lea, Cont. Geol.

Calyptræa.

C. costata, Say, Sil. Jour. ii.
corrugata, Brod., " i. N. S.
grandis, Say, Jour. Acad. iv.
pileolus, H. C. Lea, Trans. Phil. ix.
rugosa, Brod., Sil. Jour. i. N. S.
trochiformis, Lam. Nat. Inst. No. 2.

Cancellaria.

C. alternata, Con., Jour. Acad. vii.
alveata, Con., Tert. Foss.
babylonica, Lea, Cont. Geol.
biplicifera, Con., Jour. Acad. vii.
corbula, Con., Pro. Acad. i.
C. costata, Lea, Cont. Geol.
elevata, Lea, " "
engonata, Con., Jour. Acad. viii.
funerata, Con., Pro. Acad. iii.
gemmata, Con., Tert. Foss.
lunata, Con., Jour. Acad. vi.
Mississippiensis, Con., Pro. Acad. iii.
multiplicata, Lea, Cont. Geo.
parva, Lea, " "
perspectiva, Con., Jour. Acad. vii.
plagiostoma, Con., " " "
plicata, Lea, Cont. Geol.
pulcherrima, H.C. Lea. Sil. Jour. xl.
sculptura, Lea, Cont. Geol.
tesselata, Lea, " "

Capulus.

C. lugubris, Con., Jour. Acad. vii.

Cardita.

C. abbreviata, Con., Sil. Jour. xli.
alticostata, Con., " " xxiii.
bilineata, Con., Pro. Acad. iii.
Blandingi, Con., Sil. Jour. i. N. S.
Carolinensis, Con., Pro. Acad. iii.
densata, Con., Pro. Acad. ii.
granulata, Say, Sil. Jour. xxviii.
perplana, Con., " " xli.
planicosta, Lam., Tert. Foss.
subquadrata, Con., Pro. Acad. iii.
tridentata, Say, Sil. Jour. xxvii.
vigintinaria, Con., Pro. Acad. iii.

Carditamera.

C. arata, Con., Med Tert.
carinata, Con., Pro. Acad. i.
proctracta, Con., " " "

Cardium.

C. acuti-laqueatum, Con., Med. Tert.
craticuloide, Con., " "
diversum, Con., Pro. Acad. iii.
eversum, Con., " " "
glebosum, Con., " " "
isocardia, Lam., Nat. Inst. No. 2.
laqueatum, Con., Jour. Acad. vi.
leptopleura, Con., Jour. Acad. viii.
magnum. Born, Sil. Jour. xxviii.
Nicoletti, Con., Jour. Acad. viii.
quadrans, Rogers, Trans. Phil. vi.
sublineatum, Con., Sil. Jour. xli.
Vicksburgense, Con., Pro. Acad. iii.
Virginianum, Con., Med. Tert.

Caricella.

C. demissa, Con., Pro. Acad. iii
doliata, Con., " "
prætenuis, Con., " "
pyruloides, Con., "

Cassidaria.

C. lintea, Con., Pro. Acad. iii.

Cassis.

C. brevicostata, Con., Jour. Acad. vii.

C. cælata, Con., Jour. Acad. vii.
cælatura, Con., Pro. Acad. iii.
Hodgii, Con., Sil. Jour. xli.
Mississippiensis, Con., Pro. Acad. iii.
nuperus, Con., Tert. Foss.
Tatii, Con., Jour. Acad. vii.

Cemoria.

C. oblonga, H. C. Lea, Trans. Phil. ix.

Cerithium.

C. bicostellatum, Con., Pro. Acad. iii.
Carolinense, Con., Sil. Jour. xli.
clavulus, H. C. Lea, Trans. Phil. ix.
curtum, H. C. Lea, " " "
dædaleum, H. C. Lea, " " "
dislocatum, Say, Jour. Acad. vii.
moniliferum, H. C. Lea, Trans. Phil. ix.
nassula, Con., Jour. Acad. vii.
siliceum, Con., Pro. Acad. iii.
solitarium, Con., Jour. Acad. vii.
striatum, Lea, Cont. Geol.
unilineatum, Con., Sil. Jour. xli.

Chama.

C. arcinella, Lam., Sil. Jour. xxviii.
congregata, Con., " " xxiii.
corticosa, Con., " " "
Mississippiensis, Con. Pro. Acad. iii.

Chenopus.

C. liratus, Con., Pro. Acad. iii.

Chiton.

C. transenna, H. C. Lea, Trans. Phil. ix.

Clathrodon.

C. cuneatus, Gray, Jour. Acad. vi.

Conus.

C. adversarius, Con., Sil. Jour. xxix.
Claibornensis, Lea, Cont. Geol.
diluvianus, Green, Nat. Inst. No. 2.
gyratus, Morton, Jour. Acad. viii.
parvus, H. C. Lea, Sil. Jour. xl.
sauridens, Con., Tert. Foss.

Corbis.

C. distans, Con., Tert. Foss.
lamellosa, Lam., " "
staminea, Con., Pro. Acad. iii.
undata, Con., Tert. Foss.

Corbula.

C. Alabamiensis, Lea, Cont. Geol.
alta, Con., Pro. Acad. iii.
compressa, Lea, Cont. Geol.
contracta, Say, Jour. Acad. vii.
cuneata, Say, " " iv.
elevata, Con., Nat. Inst. No. 2.
elongata, Con., Pro. Acad. iii.
engonata, Con., Pro. Acad. iii.
gibbosa, Lea, Cont. Geol.
idonea, Con., Sil. Jour. xxiii.
inæqualis, Say, Jour. Acad. iv.
intastriata, Con., Pro. Acad. iii.
Murchisoniana, Lea, Cont. Geol.
nasuta, Conn., Tert. Foss.

C. onicus, Con., Sil. Jour. xxiii.

Crassatella.

C. alæformis, Con., Jour. Acad. vi.
alta, Conn., Tert. Foss.
capri-cranium, Rogers, Trans. Phil. vi.
Marilandica, Con., Tert. Foss.
melina, Con., " "
Mississippiensis, Con., Pro. Acad. iii.
palmula, Con., Sil. Jour. i. N. S.
protexta, Con., Tert. Foss.
rhomboidea, Con., Sil. Jour. i. N. S.
turgidula, Con., Pro. Acad. i.
undulata, Say, Jour. Acad. iv.

Crepidula.

C. convexa, Say, Sil. Jour. xxviii.
cornu arietis, Lea, Cont. Geol.
cornucopia, H. C. Lea, Trans. Phil. ix.
costata, Morton, Jour. Acad. vi.
cymbæformis, Con., Pro. Acad. ii.
densata, Con., " " i.
dumosa, Con., Jour. Acad. vii.
fornicata, Say, Sil. Jour. xli.
glauca, Say, " " xxviii.
lamina, H. C. Lea, Trans. Phil. ix.
lirata, Con., Sil. Jour. xxiii.
plana, Say, " " xxviii.
ponderosa, H. C. Lea, Trans. Phil. ix.
spinosa, Con., Pro. Acad. i.
unguiformis, Lam., Nat. Inst. No. 2.

Cristellaria.

C. rotella, Con., Sil. Jour. ii. N. S.

Cryptostoma.

C. perspectivum, Say, Nat. Inst. No. 2.

Cucullæa.

C. gigantea, Con., Jour. Acad. vi.
onochæla, Rogers, Trans. Phil. vi.
transversa, Rogers, " "

Cultellus.

C. Caribœus, Linn., Sil. Jour. i. N. S.

Cumingia.

C. tellinoides, Con., Nat. Inst. No. 2.

Cypræa.

C. Carolinensis, Con., Sil. Jour. xli.
lintea, Con., Pro. Acad. iii.
sphæroides, Con., " "

Cypricardia.

C. arata, Con., Tert. Foss.

Cyrena.

C. Carolinensis, Bosc., Sil. Jour. xxviii.
densata, Con., Pro. Acad. i.

Cytherea.

C. æquorea, Con., Tert. Foss.
albaria, Say, Am. Con.
astartæformis, Con., Pro. Acad. iii.
Carolinensis, Con., Sil. Jour. xli.
comis, Lea, Cont. Geol.
concentrica, Born, Jour. Acad. iv.
convexa, Say, " " "

C. discoidalis, Con., Tert. Foss.
elevata, H. C. Lea, Trans. Phil. ix.
elevata, Con., Sil. Jour. i. N. S.
erycinoides, Lam., Nat. Inst. No. 2.
eversa, Con. Pro. Acad. ii.
Floridana, Con., Sil. Jour. ii. N. S.
gigantea, Lam., Jour. Acad. vii.
globosa, Lea, Cont. Geol.
Hydiana, Con., Tert. Foss.
Hydii, Lea, Cont. Geol.
imitabilis, Con., Pro Acad. iii.
lenticularis, Con., Trans. Phil. vi.
liciata, Con., Pro. Acad. ii.
Marilandica, Con., Sil. Jour. xxiii.
metastriata, Con., Med. Tert.
minima, Lea, Cont. Geol.
Mississippiensis, Con., Pro. Acad. iii.
Mortoni, Con., Jour. Acad. vii.
Nuttalli, Con., " "
obovata, Con., " "
ovata, Rogers, Trans. Phil. v.
pandata, Con., Jour. Acad. vii.
perbrevis, Con., Pro. Acad. iii.
perovata, Con., Tert. Foss.
Poulsoni, Con., " "
pyga, Con., Pro. Acad. ii.
reposta, Con., Jour. Acad. vii.
Sayana, Con., Sil. Jour. xxviii.
semipunctata, Con., Jour. i. N. S.
sobrina, Con., Pro. Acad. iii.
sphærica, H. C. Lea, Trans. Phil. ix.
subcrassa, Lea, Cont. Geol.
subimpressa, Con., Pro. Acad. ii.
subnasuta, Con. Jour. Acad. viii.
trigoniata, Lea, Cont. Geol.

DELPHINULA.

D. aperta, H. C. Lea, Trans. Phil. ix.
arenosa, Con., Pro. Acad. iii.
concava, H. C. Lea, Trans. Phil. ix.
costulata, H. C. Lea, " " "
depressa, Lea, Cont. Geol.
globulus, H. C. Lea, Trans. Phil. ix.
lipara, H. C. Lea, " " "
lyra, Con. Jour. Acad. vii.
naticoides, H. C. Lea, Trans. Phil. ix.
obliquèstriata, H. C. Lea, " " "
plana, Lea, Cont. Geol.
trochiformis, H. C. Lea, Trans. Phil. ix.

DENTALIUM.

D. alternatum, Lea, Cont. Geol.
arciforme, Con., Sil. Jour. i. N. S.
attenuatum, Say, Jour. Acad. iv.
coarctatum, Lam., Sil. Jour. i. N. S.
dentale, Lam. " " "
Mississippiense, Con., Pro. Acad. iii.
thalloide, Con., Tert. Foss.
thallus, Con., Jour. Acad. vii.
turritum, Lea, Cont. Geol.

DIPLODONTA.

D. Americana, De France, Sil. Jour. xli.

DISPOTÆA.

D. constricta, Con., Nat. Inst. No. 2.
corrugata, Brod., Sil. Jour. i. N. S.
costata, Say, Jour. Acad. iv.
dumosa, Con., Sil. Jour. xli.
grandis, Say, Jour. Acad. iv.
multilineata, Con., Sil. Jour. xli.
ramosa, Con., Jour. Acad. viii.
rugosa, Brod., Sil. Jour. i. N. S.

DONAX.

D. funerata, Con., Pro. Acad. iii.
limatula, Con., Tert. Foss.

EGERIA.

E. Bucklandi, Lea, Cont. Geol.
inflata, Lea, " "
nana, Lea, " "
nitens, Lea, " "
ovalis, Lea, " "
plana, Lea, " "
rotunda, Lea, " "
subtrigona, Lea, " "
triangulata, Lea, " "
veneriformis, Lea, " "

ECPHORA.

E. quadricostatus, Con., Pro. Acad. i.

EMARGINULA.

E. arata, Con., Tert. Foss.

ERYCINA.

E. æquorea, Con., Tert. Foss.
rectilinearis, Con., Tert. Foss.

ERYCINELLA.

E. ovalis, Con., Med. Tert.

EULIMA.

E. eborea, Con., Pro. Acad. iii.
migrans, Con., " " "

FASCIOLARIA.

F. elevata, Lea, Cont. Geol.
Lamberti, Sow., Jour. Acad. vi.
mutabilis, Con., Jour. Acad. vii.
parvula, H. C. Lea, Trans. Phil. ix.
plicata, Lea, Cont. Geol.
rhomboidea, Rogers, Trans. Phil. vi.

FICUS.

F. Mississippiensis. Con., Pro. Acad. iii.

FISSURELLA.

F. alticosta, Con., Jour. Acad. vii.
catilliformis, Rogers, Trans. Phil. v.
Clairbornensis, Lea, Cont. Geol.
græca, Lam., Jour. Acad. vi.
Griscomi, Con., " " vii.
Marilandica, Con., " "
Mississippiensis, Con., Pro. Acad. iii.
nassula, Con., Med. Tert.
redimicula, Say, Jour. Acad. iv.
tenebrosa, Con., Tert. Foss.

FISTULANA.

F. elongata, Desh., Nat. Inst., No. 2.
larva, Con., Sil. Jour. i. N. S.

FULGORARIA.
F. Mississippiensis,Con.,Pro. Acad. iii.
FULGUR.
F. canaliculatus, Linn., Jour. Acad. iv.
carica, Gmel.
contrarius, Sil. Jour. xxxix.
coronatus, Con., Nat. Inst. No. 2.
excavatus, Sil. Jour. xxxix.
fusiformis, Con., Nat. Inst. No. 2.
incilis, Con., Sil. Jour. xxiii.
maximus, " " xli.
perversus, Lam., " "
rugosus, Con., Pro. Acad. i.
tuberculatus, Con., Nat. Inst. No. 2.
FUSUS.
F. acutus, Lea, Cont. Geol.
altilis, Con., Tert. Foss.
anomalus,H. C. Lea, Trans. Phil. ix.
bicarinatus, Lea, Cont. Geol.
bellus, Con., Tert. Foss.
(?) cannabinus, Con., Pro. Acad. i.
cinereus, Say, Sil. Jour. xxviii.
Conybeari, Lea, Cont. Geol.
Cooperi, Con., Jour. Acad. vii.
crebrissimus, Lea, Cont. Geol.
decisus, Con., Tert. Foss.
decussatus, Lea, Cont. Geol.
Delabechii, Lea, " "
devexus, Con., Pro. Acad. i.
errans, Con., Jour. Acad. vi.
exilis, Con., Tert. Foss.
explicatus, Con., Tert. Foss.
Fittonii, Lea, Cont. Geol.
inauratus, Con., Tert. Foss.
irrasus, Con., Jour. Acad. vii.
limulus, Con., Tert. Foss.
longævus, Lam., Sil. Jour. i. N. S.
magnocostatus, Lea, Cont. Geol.
migrans, Con., Pro. Acad. i.
minor, Lea, Cont. Geol.
Mississippiensis,Con.,Pro.Acad. iii.
Mortoni, Lea, Cont. Geol.
nanus, Lea, " "
ornatus, Lea, " "
pachyleurus, Con., Jour. Acad. viii.
papillatus, Con., Tert. Foss.
parilis, Con., " "
parvus, Lea, Cont. Geol.
perlatus, Con., Sil. Jour. i. N. S.
prorutus, Con., Tert. Foss.
proscissus, Con., Tert. Foss.
protextus, Con., " "
pulcher, Lea, Cont. Geol.
pumilis, Lea, " "
pygmæus, H. C. Lea,Trans. Phil. xi.
quadricostatus, Say, Jour. Acad. iv.
ranelloides, Con., Tert. Foss.
raphanoides, Con., Jour. Acad. vii.
rusticus, Con., " " vi.
salebrosus, Con., Jour. Acad. vii.
F. sexangulus, Con., Jour. Acad. vii.
spiniger, Con., Pro. Acad. iii.
stamineus, Con., Tert. Foss.
strumosus, Con., " "
sulcosus, Con., " "
symmetricus, Con., Jour. Acad. vii.
Taitii, Lea, Cont. Geol.
tetricus, Con., Tert. Foss.
thalloides, Con., " "
thoracicus, Con., " "
trabeatus, Con., " "
trossulus, Con., " "
venustus, Lea, Cont. Geol.
Vicksburgensis,Con., Pro. Acad. iii.
GASTROCHÆNA.
G. ligula, H. C. Lea, Trans. Phil. ix.
GNATHADON.
G. cuneatus, Gray, Sil. Jour. xxviii.
Grayi, Con., " " xxxviii.
minor, Con., " " xli.
GRATELUPIA.
G. Moulinsii, Lea, Cont. Geol.
GRYPHÆA.
G. vomer, Morton, Jour. Acad. vi.
HIATELLA.
H. lancea, H. C. Lea, Trans. Phil. ix.
HIPPAGUS.
H. isocardiodes, Lea, Cont. Geol.
HIPPONIX.
H. pygmæus, Lea, Cont. Geol.
INFUNDIBULUM.
I. carinatum, Con., Pro. Acad. iii.
centrale, Con., Sil. Jour. xli.
concentricum, H. C. Lea, Trans. Phil. ix.
gyrinum, Con., Jour. Acad. vii.
perarmatum, Con., " " viii.
trochiforme, Lea, Cont. Geol.
urticosum, Con., Tert. Foss.
ISOCARDIA.
I. fraterna, Say, Jour. Acad. iv.
Markoëi, Con., Nat. Inst. No. 2.
rustica, Sow., Med. Tert.
KELLIA.
K. fabagella, Con., Pro. Acad. i.
mactroides, Con., " " "
LEPTON.
L. mactroides, Con., Jour. Acad. viii.
LIMA.
L. papyria, Con., Journ. Acad. viii.
staminea, Con., Pro. Acad. iii.
LITHODOMUS.
L. dactylus, Sil. Jour. i. N. S.
LITTORINA.
L. antiquata, Con., Tert. Foss.
LORIPES.
L. Americana, Con., Pro. Acad. i.
eburnea, Con., " " iii.
elevata, Con., " " i.
turgida, Con., " " iii.

LUCINA.

L. acclinis, Con., Tert. Foss.
alveata, Con., " "
anodonta, Say, Jour. Acad. iv.
carinifera, Con., Tert. Foss.
compressa, Lea, Cont. Geol.
contracta, Say, Jour. Acad. iv.
cornuta, Lea, Cont. Geol.
crenulata, Con., Sil. Jour. xli.
cribraria, Say, Jour. Acad. iv.
divaricata, Lam., " " "
dolabra, Con., Tert. Foss.
Foremani, Con., Jour. Acad. viii.
impressa, Lea, Cont. Geol.
Jamaicensis, Lam., Sil. Jour. i. N. S.
lens, H. C. Lea, Trans. Phil. ix.
lunata, Lea, Cont. Geol.
metastriata, Con., Med. Geol.
Mississippiensis, Con., Pro. Acad. iii.
modesta, Con., Sil. Jour. i. N. S.
multistriata, Con., Pro. Acad. i.
pandata, Con., Tert. Foss.
papyracea, Lea, Cont. Geol.
perlevis, Con., Pro. Acad. iii.
pomilia, Con., Tert. Foss.
punctulata, H. C. Lea, Trans. Phil. ix.
radians, Con., Sil. Jour. xli.
radula, Lam., " " i. N. S.
rotunda, Lea, Cont. Geol.
speciosa, Rogers, Trans. Phil. v.
squamosa, Lam., Med. Tert.
subobliqua, Say, Jour. Acad. iv.
subplanata, Con., " viii.
subvexa, Con., Tert. Foss.
symmetrica, Con., "
trisulcata, Con., Sil. Jour. xli.
undula, Con., Med. Tert.

LUTRARIA.

L. canaliculata, Say, Jour. Acad. vii.
lapidosa, Con., Sil. Jour. i. N. S.
papyria, Con., Tert. Foss.

MACTRA.

M. clathrodon, Lea, Cont. Geol.
clathrodonta, Con., Sil. Jour. xxiii.
confraga, Con., " "
congesta, Con., " "
crassidens, Con., " xli.
decisa, Con., Tert. Foss.
delumbis, Con., " "
dentata, Lea, Cont. Geol.
fragrosa, Con., Sil. Jour. xxiii.
funerata, Con., Pro. Acad. iii.
grandis, Linn., Jour. Acad. vi.
Grayi, Lea, Cont. Geol.
incrassata, Con., Med. Tert.
lateralis, Say, Jour. Acad. vii.
Mississippiensis, Con., Pro. Acad. iii.
modicella, Con., Sil. Jour. xxiii.
parilis, Con., Tert. Foss.
M. ponderosa, Con., Jour. Acad. vi.
prætenuis, Con., Tert. Foss.
pygmæa, Lea, Cont. Geol.
subcuneata, Con., Nat. Inst. No. 2.
subparilis, Con., Sil. Jour. xli.
solidissima, Chem., " xxviii.
tellinoides, Con., " "
triquetra, Con., Pro. Acad. i.

MARGINELLA.

M. anatina, Lea, Cont. Geol.
biplicata, Lea, " "
columba, Lea, " "
conulus, H. C. Lea, Trans. Phil. ix.
crassilabra, Con., Tert. Foss.
crassilabra, Lea, Cont. Geol.
denticulata, Con., Jour. Acad. vi.
eburneola, Con., " vii.
exilis, H. C. Lea, Trans. Phil. ix.
incurva, Lea, Cont. Geol.
larvata, Con., Tert. Foss.
limatula, Con., Jour. Acad. vii.
ovata, Lea, Cont. Geol.
plicata, Lea, " "
perexigua, Con., Jour. Acad. viii.
semen, Lea, Cont. Geol.

MELANIA.

M. vetusta, Con., Tert. Foss.

MELONGENA.

M. alveata, Con., Sil. Jour. xxiii.
armigera, Con., Tert. Foss.
crassicornuta, Con., Pro. Acad. iii.

MITRA.

M. bolaris, Con., Tert. Foss.
Carolinensis, Con., Sil. Jour. xli.
cellulifera, Con., Pro. Acad. iii.
conquisita, Con., " " "
doliata, Con., Tert. Foss.
eburnea, H. C. Lea, Sil. Jour. xl.
elegans, H. C. Lea, " "
Flemingii, Lea, Cont. Geol.
fusoides, Lea, " "
gracilis, H. C. Lea, Sil. Jour. xl.
Humboldtii, Lea, Cont. Geol.
lineata, Lea, " "
minima, Lea, " "
Mississippiensis, Con., Pro. Acad. iii.
pactilis, Con., Tert. Foss.
perexilis, Con., " "
staminea, Con., Pro. Acad. iii.
Vicksburgensis, Con., " "

MODIOLA.

M. cretacea, Con., Trans. Geol.
Ducatelli, Con., Med. Tert.
Mississippiensis, Con., Pro. Acad. iii.
spingera, H. C. Lea, Trans. Phil. ix.

MONOCERAS.

M. armigerum, Con., Tert. Foss.
fusiforme, Lea, Cont. Geol.
pyruloide, Lea, " "
sulcatum, Lea, " "

M. vetustum, Con., Tert. Foss.
MONODONTA.
M. exoluta, Con., Pro. Acad. i.
glandula, Con., Jour. Acad. vi.
MONOPTYGMA.
M. Alabamiensis, Lea, Cont. Geol.
elegans, Lea, " "
MUREX.
M. acuticosta, Con., Jour. Acad. vi.
alternatus, Lea, Cont. Geol.
engonatus, Con., Tert. Foss.
Mantellii, Con., Jour. Acad. vii.
Mississippiensis,Con., Pro. Acad.iii.
septemnarius, Con., Jour. Acad. vii.
umbrifer, Con., Tert. Foss.
MYA.
M. arenaria, Linn., Sil. Jour. xxviii.
corpulenta, Con., Med. Tert.
mercenaria, Say, Jour. Acad. vi.
prælonga, Con., Nat. Inst. No. 2.
producta, Con., Med. Tert.
reflexa, H. C. Lea, Trans. Phil. ix.
MYALINA.
M. subovata, Con., Med. Tert.
MYOCONCHA.
M. incurva, Con., Med. Tert.
MYODORA.
M. arenosa, Con., Pro. Acad. iii.
MYOPARO.
M. costatus, Lea, Cont. Geol.
MYSIA.
M. Americana, Con., Med. Tert.
nucleiformis, Wagner, Jour. Acad. viii.
rotundata, Sil. Jour. xxviii.
MYTILUS.
M. hamatus, Say, Sil. Jour. xxviii.
incrassatus, Con., " xli.
NARICA.
N. Mississippiensis,Con., Pro. Acad.iii.
NASSA.
N. cancellata, Lea, Cont. Geol.
impressa, H. C. Lea, Trans. Phil.ix.
lunata, Say, Sil. Jour. i. N. S.
obsoleta, Say, " xxviii.
quadrata, Con., Jour. Acad. vi.
trivittata, Say, Sil. Jour. xxviii.
NATICA.
N. ætites, Con., Tert. Foss.
aperta, H. C. Lea, Trans. Phil. ix.
canrena, Lam., Sil. Jour. xli.
Caroliniana, Con., " "
crassilabrum, H. C. Lea, Trans. Phil. ix.
duplicata, Say, Sil. Jour. xli.
eborea, Con., Tert. Foss.
eminula, Con., " "
fragilis, Con., Jour. Acad. vi.
gibbosa, Lea, Cont. Geol.
heros, Say, Sil. Jour. xli.
N. interna, Say, Jour. Acad. iv.
limula, Con., Tert. Foss.
magno-umbilicata, Lea, Cont. Geol.
mamma, Lea, " "
minima, Lea, " "
minor, Lea, " "
Mississippiensis,Con., Pro. Acad.iii.
parva, Lea, Cont. Geol.
percallosa, Con., Sil. Jour. xli.
perspectiva, Rogers, Trans. Phil. v.
semilunata, Lea, Cont. Geol.
sphærulus,H. C. Lea, Trans. Phil.ix.
striata, Lea, Cont. Geol.
Vicksburgensis, Con., Pro. Acad.iii.
NAUTILOPSIS.
N. Vanuxemi, Con., Pro. Acad. iii.
NAUTILUS.
N. Alabamiensis, Morton, Jour. Acad. viii.
NUCULA.
N. Acuta, Con., Sil. Jour. xxviii.
acutidens,H. C. Lea, Trans. Phil.ix.
æqualis, Con., Tert. Foss.
æquilatera, H. C. Lea, Trans, Phil. ix.
antiqua, Mighels, Bost. Jour. iv.
bella, Con., Sil. Jour. xxiii.
Brogniarti, Lea, Cont. Geol.
calcariensis, Con., Pro. Acad. iii.
carinata, H. C. Lea, Trans. Phil. ix.
carinifera, Lea, Cont. Geol.
Carolinensis, Con., Pro. Acad. iii.
cælata, Con., Sil. Jour. xxiii.
concentrica, Say, Jour. Acad. iv.
cultelliformis,Rogers,Trans.Phil.iv.
diaphana, H. C. Lea, " " ix.
dolabella, H. C. Lea, " " "
Jacksonii, Gould, Bost. Jour. iv.
lævis, Say, Jour. Acad. iv.
liciata, Con., Pro. Acad. i.
limatula, Say, Sil. Jour. xxvii.
magna, Lea, Cont. Geol.
magnifica, Con., Tert. Foss.
media, Lea, Cont. Geol.
mucronata, Con., Pro. Acad. iii.
obliqua, Say, Sil. Jour. ii.
opulenta, Con., Tert. Foss.
ovula, Lea, Cont. Geol.
parva, Rogers, Trans. Phil. v.
pectuncularis, Lea, Cont. Geol.
plana, Lea, " "
plicata, Lea, " "
Portlandica,Hitchcock, Bost.Jour.i.
proxima, Say, Sil. Jour. xxviii.
pulcherrima, Lea, Cont. Geol.
Sedgwickii, Lea, " "
semen, Lea, " "
serica, Con., Pro. Acad. iii.
subtrigona, Con., " "
tellinula, Con., Sil. Jour. ii. N. S.

N. Vicksburgensis, Con., Pro. Acad. iii.

NUMMULITES.

N. Floridanus, Con., Sil. Jour. ii. N. S.
Mantelli, Morton, " xxiii.

ODOSTOMIA.

O. limnea, Con., Pro. Acad. iii.
protexta, Con., " " "

OLIVA.

O. Alabamensis, Con., Tert. Foss.
ancillariæformis, H. C. Lea, Trans. Phil. ix.
bombylis, Con., Tert. Foss.
canaliculata, H. C. Lea, Trans. Phil. ix.
Carolinensis, Nat. Inst. No 2.
constricta, Lea, Cont. Geol.
dubia, Lea, " "
duplicata, Con., Pro. Acad. i.
gracilis, Lea, Cont. Geol.
Greenoughi, Lea, "
idonea, Sil Jour. xli.
litterata, Lam., Jour. Acad. vii.
minima, Lea, Cont. Geol.
Mississippiensis, Con., Pro. Acad. iii.
mutica, Lam., Sil. Jour. xli.
Phillipsii, Lea, Cont. Geol.
zonalis, Lam , Jour. Acad. vii.

ONISCIA.

O. harpula, Con., Pro. Acad. iii.

ORBICULA.

O. lugubris, Con., Sil. Jour. xli.
multilineata, Con., Med. Tert.

ORBIS.

O. rotella, Lea, Cont. Geol.

OSTREA.

O. Alabamensis, Lea, Cont. Geol.
bellovacina, Nat. Inst.
Carolinensis, Con., Tert. Foss.
compressirostra, Say, Jour. Acad. iv.
disparilis, Con., Med. Tert.
cretacea, Morton, Jour. Acad. viii.
flabellula, Lam., " " vi.
Georgiana, Con., " " vii.
divaricata, Lea, Cont. Geol.
lingua-canis, Lea, " "
lateralis, Nillson, Nat. Inst.
panda, Morton, " "
percrassa, Con., Med. Tert.
pincerna, Lea, Cont. Geol.
radians, Con., Tert. Foss.
sculpturata, Con., Med. Tert.
sellæformis, Con., Tert. Foss.
semilunata, Lea, Cont. Geol.
sinuosa, Rogers, Trans. Phil. v.
subfalcata, Con., Med. Tert.
Vicksburgensis, Con., Pro. Acad. iii.
Virginiana, Gmel., Tert. Foss.

OVULA.

O. iota, Con., Pro. Acad. iii.

PALUDINA.

P. glabra, Con., Pro. Acad. i.

PANDORA.

P. arenosa, Con., Jour. Acad. vii.
crassidens, Con., Med. Tert.
trilineata, Say, Sil. Jour. xxviii.

PANOPÆA.

P. abrupta, Con., Pro. Acad. i.
Americana, Con., Med. Tert.
dubia, H. C. Lea, Trans. Phil. ix.
elongata, Con., Trans. Geol.
Goldfussii, Wagner, Jour. Acad. viii.
oblongata, Con., Pro. Acad. iii.
porrecta, Con., Med. Tert.
reflexa, Say, Jour. Acad. iv.

PASITHEA.

P. aciculata, Lea, Cont. Geol.
alveata, Lea, " "
cancellata, H. C. Lea, Sil. Jour. xl.
Claibornensis, Lea, Cont. Geol.
diaphana, H. C. Lea, Trans. Phil. ix.
eburnea, H. C. Lea, " " "
elegans, H. C. Lea, Sil. Jour. xl.
exarata, H. C. Lea, Trans. Phil. ix.
guttula, Lea, Cont. Geol.
lævigata, H. C. Lea, Trans. Phil. ix.
lugubris, Lea, Cont. Geol.
minima, H. C. Lea, Sil. Jour. xl.
notata, Lea, Cont. Geol.
ornata, H. C. Lea, Trans. Phil. ix.
ovulum, H. C. Lea, " " "
secale, Lea, Cont. Geol.
striata, Lea, " "
subula, H. C. Lea, Trans. Phil. ix.
sulcata, Lea, Cont. Geol.
turbinopsis, H. C. Lea, Trans. Phil. ix.
umbilicata, Lea, Cont. Geol.

PATELLA.

P. acinaces, H. C. Lea, Trans. Phil. ix.

PECTEN.

P. anatipes, Morton, Trans. Phil. ix.
biformis, Con., Pro. Acad. i.
calvatus, Morton, Jour. Acad. viii.
Clintonius, Say, " " iv.
concentricus, Say, Sil. Jour. xxviii.
decemnarius, Con., Jour. Acad. vii.
Deshaysii, Lea, Cont. Geol.
dislocatus, Say, Nat. Inst. No. 2.
dispalatus, Con., Med. Tert.
eboreus, Con., Sil. Jour. xxiii.
elixatus, Con., Pro. Acad. ii.
Holbrookii, Ravenel, "
Humphreysii, Con., Nat. Inst. No. 2.
Jeffersonius, Say, Jour. Acad. iv.
Lyelli, Lea, Cont. Geol.
Madisonius, Say, Jour. Acad. ix.
Magellanicus, Lam., " " vii.
Marilandicus, Wagner, " viii.

P. membranosus, Morton, Jour. Acad. viii.
micropleura, H. C. Lea, Trans. Phil. ix.
Mortoni, Ravenel, Pro. Acad. ii.
perplanus, Morton, Sil. Jour. xxiii.
Poulsoni, Morton, Jour. Acad. viii.
purpuratus, Lam., Sil. Jour. xxviii.
Rogersii, Con., Jour. Acad. vii.
septenarius, Say, " iv.
tenuis, H. C. Lea, Trans. Phil. ix.
tricenarius, Con., Pro. Acad. i.
vicenarius, Con., " " "
Virginianus, Con., Med. Tert.

PECTUNCULUS.

P. aratus, Con., Sil. Jour. xli.
arctatus, Con., Pro. Acad. iii.
aviculoides, Con., Tert. Foss.
Broderipii, Lea, Cont. Geol.
Carolinensis, Con., Sil. Jour. xli.
circularis, Con., " " xxviii.
corbuloides, Con., Tert. Foss.
cuneus, Con., Sil. Jour. xxiii.
decisus, Con., Tert. Foss.
declivis, Con., " "
deltoideus, Lea, Cont. Geol.
elephantopus, H. C. Lea. Trans. Phil. ix.
ellipsis, Lea, Cont. Geol.
idoneus, Con., Tert. Foss.
lentiformis, Con., Nat. Inst. No. 2.
minor, Lea, Cont. Geol.
oliqua, Lea, " "
parilis, Con., Pro. Acad. i.
passus, Con., Med. Tert.
pectinatus, Lam., Sil. Jour. xxviii.
perplanus, Con., Jour. Acad. vii.
pulvinatus, Lam., Tert. Foss.
quinquerugatus, Con., Sil. Jour. xli.
stamineus, Con., " " xxiii.
subovatus, Say, Jour. Acad. iv.
tricenarius, Con., Med. Tert.
trigonella, Con., Sil. Jour. xxiii.
tumulus, Con., Med. Tert.
variabilis, Sow., Jour. Acad. vi.

PERIPLOMA.

P. antiqua, Con., Jour. Acad. vii.

PERNA.

P. torta, Say, Sil. Jour. ii.
maxillata, Lam., Med. Tert.

PETALOCONCHUS.

P. sculpturatus, H. C. Lea, Trans. Phil. ix.

PETRICOLA.

P. cenrenaria, Con., Sil. Jour. xxiii.
fornicata, Say, Jour. Acad. vi.
compressa, H. C. Lea, Trans. Phil. ix.
pholadiformis, Lam., Jour. Acad. vi.

PHOLADOMYA.

P. abrupta, Con., Tert. Foss.
Marilandica, Con., Nat. Inst. No. 2.

PHOLAS.

P. acuminata, Con., Med. Tert.
arcuata, Con., Nat. Inst. No. 2.
costata, Linn., Sil. Jour. xxviii.
ovalis, Say, " " ii.
petrosa, Con., Nat. Inst. No. 2.
rhomboidea, H. C. Lea, Trans. Phil. ix.
triquetra, Con., Pro. Acad. iii.

PHORUS.

P. humilis, Con., Pro. Acad. iii.

PINNA.

P. argentea, Con., Pro. Acad. iii.

PLAGIOSTOMA.

P. dumosum, Morton, Jour. Acad. viii.

PLANARIA.

P. nitens, Lea, Cont. Geol.

PLEUROTOMA.

P. abundans, Con., Pro. Acad. iii.
alternatum, Con., Tert. Foss.
Beaumontii, Lea, Cont. Geol.
bellacrenatum, Con., Jour. Acad. viii.
biscatenarium, Con., " vii.
cælatum, Lea, Cont. Geol.
cancellatum, H. C. Lea, Sil. Jour. xl.
catenatum, Con., Jour. Acad. vi.
Childreni, Lea, Cont. Geol.
cochleare, Con., Pro. Acad. iii.
commune, Con., Jour. Acad. vi.
congestum, Con., Pro. Acad. iii.
cristatum, Con., " " "
declivum, Con., " " "
depyge, Con., Tert. Foss.
Desnoyersii, Lea, Cont. Geol.
dissimile, Con., Jour. Acad. vi.
eboroide, Con., Pro. Acad. iii.
elaboratum, Con., Tert. Foss.
elongatum, Con., Jour. Acad. vi.
gracile, Con., " " "
Hæninghausii, Lea, Cont. Geol.
inciliferum, Con., Jour. Acad. vii.
Lesueurii, Lea, Cont. Geol.
limatulum, Con., Jour. Acad. vi.
Lonsdalii, Lea, Cont. Geol.
lunatum, H. C. Lea, Trans. Phil. ix.
Marilandicum, Con. Jour. Acad. viii.
Mississippiense, Con., Pro. Acad. iii.
moniliferum, Lea, Cont. Geol.
multisectum, Con., Pro. Acad. i.
nuperum, Con., Tert. Foss.
obliquum, Lea, Cont. Geol.
parvum, Con., Jour. Acad. vi.
porcellanum, Con., Pro. Acad. iii.
pyrenoide, Con., Jour. Acad. vii.
rotædens, Con., Pro. Acad. iii.
rotiferum, Con., Jour. Acad. vi.

P. rugosum, Lea, Cont. Geol.
Sayi, Lea, " "
serratum, Con., Pro. Acad. iii.
tabulatum, Con., Tert. Foss.
tantulum, Con., Pro. Acad. iii.
tenellum, Con., " "
tricatenarium, Con., Jour. Acad. vii.
Virginianum, Con., " "

PLICATULA.

P. densata, Con., Pro. Acad. i.
filamentosa, Con., Tert. Foss.
Mantellii, Lea, Cont. Geol.
marginata, Say, Jour. Acad. iv.
ramosa, Lam., " " vi.
rudis, H. C. Lea, Trans. Phil. ix.

PROTO.

P. vetusta, Con., Jour. Acad. vii.

PSAMMOBIA.

P. eborea, Con., Tert. Foss.
filosa, Con., " "
fusca, Say, Jour. Acad. vi.
lintea, Con., Pro. Acad. iii.
lusoria, Say, Jour. Acad. vi.
papyria, Con., Pro. Acad. iii.

PSAMMOCOLA.

P. lucinoides, H. C. Lea, Trans. Phil. ix.
regia, H. C. Lea, " " "

PYRAMIDELLA.

P. arenosa, Con., Pro. Acad. i.
elaborata, H. C. Lea, Trans. Phil. ix.
larvata, Con., Tert. Foss.
suturalis, H. C. Lea, Trans. Phil. ix.

PYRULA.

P. canaliculata, Linn., Jour. Acad. iv.
cancellata, Lea, Cont. Geol.
carica, Gmel.
elegantissima, Lea, Cont. Geol.
penita, Con., Tert. Foss.
perversa, Lam., Sil. Jour. xli.
Smithii, Lea, Cont. Geol.
sulcosa, Con., Jour. Acad. vi.
tricarinata, Lam., Nat. Inst. No. 2.

RANELLA.

R. caudata, Say, Sil. Jour. xxviii.

RANGIA.

R. cyrenoides, Des Moulins, Sil. Jour. xxviii.

RINGICULA.

R. Mississippiensis, Con., Pro. Acad. iii.

ROSTELLARIA.

R. Cuvieri, Lea, Cont. Geol.
laqueata, Con., Tert. Foss.
Lamarckii, Lea, Cont. Geol.
velata, Con., Tert. Foss.

ROTELLA.

R. carinata, H. C. Lea, Trans. Phil. ix.
lenticularis, H. C. Lea, " " "
nana, Lea, Cont. Geol.
subconica, H. C. Lea, Trans. Phil. ix.
R. umbilicata, H. C. Lea, Trans. Phil. ix.

SANGUINOLARIA.

S. fusca, Con., Sil. Jour. xxviii.
lusoria, Say, " " "

SAXICAVA.

S. bilineata, Con., Med. Tert.
distorta, Say, Jour. Acad. vi.
pectorosa, Con., Jour. Acad. vii.
rugosa, Lam., Nat. Inst. No. 2.

SCALARIA.

S. acicula, H. C. Lea, Trans. Phil. ix.
carinata, Lea, Cont. Geol.
clathra, Lam., Nat. Inst. No. 2.
cornigera, H. C. Lea, Trans. Phil. ix.
elegans, H. C. Lea, Sil. Jour. xl.
expansa, Con., Nat. Inst. No. 2.
lineata, Say, Sil. Jour. xxviii.
micropleura, H. C. Lea, Trans. Phil. ix.
microstoma, H. C. Lea, " "
nassula, Con., Tert. Foss.
pachypleura, Con., Jour. Acad. viii.
planulata, Lea, Cont. Geol.
procera, Con., Pro. Acad. i.
quinquefasciata, Lea, Cont. Geol.
sessilis, Con., Tert. Foss.
trigintanaria, Con., Pro. Acad. iii.
venusta, H. C. Lea, Sil. Jour. xl.

SCOBINELLA.

S. cælata, Con., Pro. Acad. iii.

SERPULA.

S. anguina, H. C. Lea, Trans. Phil. ix.
convoluta, H. C. Lea, " " "
granifera, Say, Jour. Acad. iv.
ornata, Lea, Cont. Geol.
squamulosa, Con., Jour. Acad. vii.

SIGARETUS.

S. arctatus, Con., Tert. Foss.
bilix, Con., Sil. Jour. xxiii.
canaliculatus, Sow., Nat. Inst. No. 2.
declivis, Con., Tert. Foss.
fragilis, Nat. Inst. No. 2.
Mississippiensis, Con., Pro. Acad. iii

SILIQUARIA.

S. Claibornensis, Lea, Cont. Geol.
vitis, Con., Tert. Foss.

SOLARIUM.

S. alveatum, Con., Tert. Foss.
amœnum, Con., " "
antrosum, Con., " "
bilineatum, Lea, Cont. Geol.
canaliculatum, Lea, Nat. Inst. No. 2.
cancellatum, Con., Sil. Jour. xxiii.
elaboratum, Con., " " "
elegans, Lea, Cont. Geol.
exacuum, Con., Tert. Foss.
funginum, Con., " "
granulatum, Lea, Cont. Geol.
Henrici, Lea, " "

S. nuperum, Con., Jour. Acad. vii.
ornatum, Lea, Cont. Geol.
patulum, Lam., Nat. Inst. No. 2.
scrobiculatum, Con., Tert. Foss.
stalagmium, Con., " "
trilineatum, Con., Jour. Acad. vii.
triliratum, Con., Pro. Acad. iii.

SOLECURTUS.

S. Blainvilli, Lea, Cont. Geol.
Caribœus, Linn., Sil. Jour. xxviii.

SOLEN.

S. ensiformis, Con., Pro. Acad. i.
ensis, Linn., Sil. Jour. xxxviii.
directus, Con., Pro. Acad. i.
magnodentatus, H. C. Lea, Trans. Phil. ix.

SPHÆRELLA.

S. subvexa, Con., Med. Tert.

SPIRORBIS.

S. tubanella, Lea, Cont. Geol.

STALAGMIUM.

S. margaritaceum, Con., Tert. Foss.

STRIGILLA.

S. carnaria, Turton, Sil. Jour. xxviii.

TELLINA.

T. æquistriata, Say, Jour. Acad. iv.
alta, Con., Tert. Foss.
alternata, Say, Nat. Inst. No. 2.
arctata, Con., Pro. Acad. i.
biplicata, Con., Jour. Acad. vii.
declivis, Con., " " "
egena, Con., " " "
lenis, Con., Pro. Acad. i.
lintea, Con., Jour. Acad. vii.
lusoria, Con., Med. Tert.
papyria, Con., Tert. Foss.
pectorosa, Con., Pro. Acad. iii.
plana, Con., Sil. Jour. i. N. S.
producta, Con., Med. Tert.
Ravenelli, Con., Sil. Jour. i. N. S.
scandula, Con., Jour. Acad. vii.
serica, Con., Pro Acad. iii.
Sillimani, Con., Sil. Jour. i. N. S.
subæqualis, Con., Pro. Acad. iii.
Vicksburgensis, Con. " " "

TEREBRA.

T. constricta, H. C. Lea. Sil. Jour. xl.
costata, Lea, Cont. Geol.
curvilirata, Con., Pro. Acad. i.
dislocata, Con., Sil. Jour. xxiii.
divisura, Con., " " "
gracilis, Lea, Cont. Geol.
loxonema, Con., Nat. Inst. No. 2.
multiplicata, H. C. Lea, Sil. Jour. xl.
polygyra, Con., Jour. Acad. vii.
simplex, Con., Jour. Acad. vi.
tantula, Con., Pro. Acad. iii.
venusta, Lea, Cont. Geol.

TEREBRATULA.

T. canipes, Ravenel, Pro. Acad. ii.
lachryma, Morton, Jour. Acad. viii.

TEREDO.

T. calamus, H. C. Lea, Trans. Phil. ix.
fistula, H. C. Lea, " " "
simplex, Lea, Cont. Geol.

THRACIA.

T. transversa, H. C. Lea, Trans. Phil. ix.

TRIQUETRA.

T. æquorea, Con., Sil. Jour. i. N. S.
rectilinearis, Con., " "

TRITON.

T. abbreviatus, Con., Pro. Acad. iii.
crassidens, Con., " " "
Mississippiensis, Con., " "
pyramidatus, H. C. Lea, Sil. Jour. xl.

TROCHUS.

T. agglutinans, Auct., Sil. Jour. i. N. S.
aratus, H. C. Lea, Trans. Phil. ix.
armillus, H. C. Lea, " " "
bellus, Con., Jour. Acad. vii.
conus, H. C. Lea, Trans. Phil. ix.
eboreus, Wagner, Jour. Acad. viii.
humilis, Con., " " vi.
labrosus, Con., " " vii
lapidosus, Con., " " "
lens, H. C. Lea, Trans. Phil. ix.
Mitchell, Con., Jour. Acad. vii.
peralveatus, Con., " viii.
philanthropus, Con., " vii.
planulatus, H. C. Lea, Sil. Jour. xl.
Ruffinii, H. C. Lea, Trans. Phil. ix.
reclusus, Con., Jour. Acad. vi.
torquatus, H. C. Lea, Trans. Phil. ix

TUBA.

T. alternata, Lea, Cont. Geol.
striata, Lea, " "
sulcata, Lea, " "

TURBINELLA.

T. demissa, Con., Jour. Acad. vii.
fusoides, H. C. Lea, Sil. Jour. xl.
perexilis, Con., Pro. Acad. iii.
prætenuis, Con., Tert. Foss.
prisca, Con., " "
protracta, Con., Pro. Acad. iii.
pyruloides, Con., Tert. Foss.
Wilsoni, Con., Pro. Acad. iii.

TURBO.

T. biliratus, Con., Pro. Acad. iii.
caperatus, Con., Jour. Acad. vii.
glaber, H. C. Lea, Trans. Phil. ix.
lineatus, Lea, Cont. Geol.
naticoides, Lea, " "
nitens, Lea, " "
parvus, H. C. Lea, Sil. Jour. xl.
rusticus, H. C. Lea, Trans. Phil. ix.

TURRITELLA.
T. alternata, Say, Sil. Jour. xxviii.
alticostata, Con. Jour. Acad. vii.
bipertita, Con., Pro. Acad. i.
carinata, Lea, Cont. Geol.
carinata, H. C. Lea, Sil. Jour. xl.
exaltata, Con., Jour. Acad. vi.
fluxionalis, Rogers, Trans. Phil. vi.
gracilis, H. C. Lea, Sil. Jour. xl.
humerosa, Con., Trans. Geol.
indenta, Con., Jour. Acad. viii.
laqueata, Con., " " vi.
lineata, Lea, Cont. Geol.
Mississippiensis, Con.,Pro. Acad.iii.
Mitchelli, Sil. Jour. xli.
monilifera, H. C. Lea, Sil. Jour. xl.
Mortoni, Con., Jour. Acad. vi.
obruta, Con., Tert. Foss.
octonaria, Con., Jour. Acad. vii.
perlaqueata, Con., " " viii.
plebeia, Say, " " iv.
quadristriata, Rogers, Trans. Phil. v.
terstriata, Rogers, " " "
variabilis, Con.. Jour. Acad. vi.
TYPHIS.
T. acuticosta, Con., Sil. Jour. xxiii.
curvirostratus, Con., Pro. Acad. iii.
gracilis, Con., Sil. Jour. xxiii.
VENERICARDIA.
V. ascia, Rogers, Trans. Phil. vi.
Blandingi, Con., Jour. Acad. vi.
granulata, Say, " " iv.
parva, Lea, Cont. Geol.
planicosta, Lam., Jour. Acad. vi.
rotunda, Lea, Cont. Geol.
Sillimani, Lea, " "
transversa, Lea, " "
VENERUPIS.
V. subvexa, Con., Sil. Jour. xxiii.
VENUS.
V. alveata, Con., Jour. Acad. vi.
V. ascia, H. C. Lea, Trans. Phil. ix.
cancellata, Linn., Sil. Jour. xxviii.
capax, Con., Pro. Acad. i.
cortinaria, Rogers, Trans. Phil. vi.
cribraria, Con., Pro. Acad. i.
deformis, Say, Jour. Acad. iv.
Ducatelli, Con., Med. Tert.
Floridana, Con., Sil. Jour. ii. N. S.
inosceriformis, Wagner, Jour. Acad. viii.
latilirata, Con., Pro. Acad. i.
latèsulcata, Con., Med. Tert.
mercenaria, Linn., Sil. Jour. xli.
metastriata, " " i. N.S.
Mortoni, Con., Jour. Acad. vii.
paphia, (?) Lam., " " vi.
penita, Con., Sil. Jour. ii. N. S.
permagna, Con., Nat. Inst. No. 2.
Rileyi, Con., Med. Tert.
staminea, Con., Nat. Inst. No. 2.
tetrica, Con., " " "
tridacnoides, Con., Med. Tert.
VERMETUS.
V. lumbricalis, Lam., Sil. Jour. xxviii.
VOLUTA.
V. Carolinensis, Sil. Jour. xxxix.
Cooperi, Lea, Cont. Geol.
Defrancii, Lea, " "
dubia, H. C. Lea, Sil. Jour. xl.
gracilis, Lea, Cont. Geol.
Lamberti, Sow., Jour. Acad. vi.
Parkinsoni, Lea, Cont. Geol..
mutabilis, Con., Pro. Acad. i.
parva, Lea, Cont. Geol.
petrosa, Con., Tert. Foss.
Sayana, Con., " "
solitaria, Con., Jour. Acad. vi.
striata, Lea, Cont. Geol.
Vanuxemi, Lea, " "
VOLVARIA.
V. galba, Con., Tert. Foss.

ELECTION OF CORRESPONDENTS.

J. P. Kirtland, M. D., Cleveland, Ohio.
Prof. J. Cobb, M. D., Louisville, Kentucky.
Prof. L. P. Yandell, M. D., do. do.
Benjamin E. Shumard, M. D., do. do.
Right Rev. George W. Doane, Burlington, N. J.
Edward Tuckerman, Esq., Cambridge, Mass.
M. Fischer de Waldheim, Moscow.

DONATIONS TO THE MUSEUM

In September and October, 1848.

September 5th.

Saurian Vertebra, from a marl bed on the Chesapeake and Delaware Canal. From Mr. D. M. Sanborn.

Fruit of Mammea Americana. From Mr. Wm. Butcher, through Mr. Cassin.

Large and fine specimen of Ammonites Delawarensis Morton, from Centreton, New Jersey; Exogyra costata, two Rostellaria, a series of Croprolites, Yellow ochre, and Fossil wood, from New Jersey. Also two specimens of Gordius Aquaticus, from Burlington, New Jercy. From Mr. L. J. Germain.

Portion of the jaw of Mosasaurus with two nearly perfect teeth, from Freehold, New Jersey, and a fine specimen of Voluta imperialis and Natica fluctuatus. From Burlington College, in exchange.

September 17th.

Hippocampus ———, from India, and a collection of Reptilia and Larvæ. From Burlington College, in exchange.

Iron Geode, from President's Island, Mississippi. From Prof. Haldeman.

Tooth of Elephas primogenius, from Mississippi, and a collection of Fish and Crustacea. From W. C. Bryan, Esq., of New York, through Prof. Haldeman.

October 3d.

Casts of teeth of Dorudon serratus, Gibbes, and of five species of Charcharodon. From Dr. R. W. Gibbes, of Columbia, S. C.

Coluber eximius (young), and two specimens of Quartz. Presented by Dr. Hallowell.

Two stuffed serpents, from New Jerusalem. Presented by Mr. H. E. Ashmead, of Philadelphia.

Mounted specimen of Tenosaura acanthura, Scincus fasciatus, and a specimen of Endymion regalis, from Tampico. Presented by Lieut. Haldeman, U. S. A., through Prof. Haldeman.

Three specimens of Sphæria Roberti, growing from the head of the larva of Vanessa itea, from New Holland. Presented by Dr. T. B. Wilson.

Medallion cast of the head of John Gould, Esq., F. R. S., of London, the celebrated ornithologist. From the same.

Numerous fragments of fossil shells, from the drift hills of Brooklyn, N. Y. Presented by William C. Redfield, Esq., of New York.

Crassatella Mississippiensis, and Ostrea Georgiana, from Vicksburg, Miss. From Mr. J. D. Anderson, through Mr. Conrad.

Fine casts of Anoplotherium commune, (Cuv.) and Palæotherium medium, (Cuv.) From the Professors of the "Jardin des Plantes" of Paris, through Dr. Leidy.

October 10th.

Mr. W. S. Vaux presented a crystal of Beryl, from Acworth, New Hampshire, weighing 185 pounds, and measuring three feet three inches in circumference and eighteen inches in length.

Specimen of polished Quartz. From Dr. Dawson, of Philadelphia.

A very fine collection of British Coleoptera, numbering between eight and nine hundred species, systematically arranged and labelled. Presented by Mr. Edward Doubleday, of London.

A collection of Minerals, chiefly iron ores. Collected and presented by Mr. George B. Allinson.

Several very fine specimens of Elba iron ore. Presented by Dr. Joseph Carson.

One hundred and nineteen mounted specimens of American birds. Presented by Mr. Edward Harris.

October 17th.

Cast of the metatarsal bone of the Dodo. From Mr. Edward Doubleday, of London.

Mounted skeleton of Manura superba. From Dr. Wilson.

Living specimen of Crotalus durissus. From Dr. Grant, of Philadelphia.

Two specimens of Iron ore. From Dr. Leidy.

DONATIONS TO LIBRARY

IN SEPTEMBER AND OCTOBER, 1848.

September 5th.

American Journal of Science and Arts. New Series. No. 7. From the Editors.

Literary Record and Journal of Linnean Association of Pennsylvania College. Vol. 4. No. 11. From the Association.

Loudon's Hortus Britannicus. 2d edition. From Mr. Kilvington.

Iconographie Ornithologique. Par O. Des Murs. Livs. 10 and 11. 4to. Presented by Mr. Edward Wilson.

The following were deposited by Dr. Wilson:

Annals and Magazine of Natural History. Vol. 2. 2d series. Nos. 6 and 7.

Forbes' and Hanley's British Mollusca. Parts 6 and 7.

Harvey's Phycologia Britannica. Parts 30 and 31.

Gosse's Illustrations of the Birds of Jamaica. Parts 3 and 4.

Quarterly Journal of the Geological Society of London. No. 14.

Comptes rendus. Tome 25. Nos. 23, 24, 25.

Oken's Isis. No. 3, 1848.

Zoology of the voyage of the Samarang. No. 2. Crustacea, Part 1.

Doubleday's Genera of Diurnal Lepidoptera. Part 20.

Hussey's British Mycology. Parts 15 and 16.

Austin's Recent and Fossil Crinoidea. No. 7.

Reeve's Conchologia Iconica. Parts 63 and 64.

Gray's Genera of Birds. Part 44.

Journals of two expeditions of discovery in N. W. and W. Australia, in 1837, '38, and '39. By George Gray, Esq. 2 vols. 8vo.

Three expeditions into the interior of Eastern Australia. By Major T. L. Mitchell. 2 vols. 8vo.

A history of British Sponges and Lithophytes. By George Johnson, M. D., 8vo.

History of the Royal Society of London. By Thomas Sprat. 4to.

Ædologie, ou traité du Rossignol Franc, ou Chanteur, &c. 12mo.

Travels to discover the source of the Nile, in the years 1768–73. By James Bruce of Kinnard, Esq. 5 vols. 4to.

Memoir of Sir Thomas Stamford Raffles. By his Widow. 4to.

Dissertation on the Antiquity of the Earth. By the Rev. James Douglass. 4to.

Natural History of Aleppo. By Alexander Russel, M. D. 2d edition. Revised by Patrick Russell, M. D. 2 vols. 4to.

Musæum Regalis Societatis. (A Catalogue of the collections of the Royal Society, preserved in Gresham.) By Nehemiah Green, M. D. Folio. 1681.

Travels in the interior of Southern Africa. By William J. Burchell. 2 vols. 4to.

Nova Acta Physico-medica Academiæ Cæsaræ Leopoldinæ Carolinæ Naturæ Curiosorum. Tome X. Part 1. 4to.

Pallas' Spicilegia Zoologica. 2 vols. 4to.

Die Werke von Marcgrave und Piso über die Naturgeschichte Brasiliens, &c. Von Herrn Lichtenstein. 4to. 4 Nos.

Ueber die weissen Robben. Von Hrn. Lichtenstein. 4to.

Prodromus der Isländischen Ornithologie, oder Geschichte der Vögel Islands. Von Friederich Faber. 8vo.

Ueber das Leben der hochnordischen Vögel. Von Friedrich Faber. No. 1. 8vo.

Classification der Säugethiere und Vögel. Von J. J. Kaup. 8vo.

Beiträge zur Naturgeschichte der Spechte. Von. K. Kessler in Kiew. 8vo.

A new system of Natural History. By George Henry Millar. Folio.

September 12*th*.

Proceedings of the Linnean Society of London. Nos. 30—34, inclusive, and Charter and By-laws of same 1848. From the Society.

The Gardener's Dictionary, &c. By Philip Miller. Folio. From Mr. R. Kilvington.

September 19*th*.

Annals of the Lyceum of Natural History of New York. Vol. 4. No. 12. From the Lyceum.

The following pamphlets were received from the author, M. Emile Blanchard, of Paris:

Rapport sur un mémoire de M. Blanchard, intitule, " Recherches sur l' organization des Vers." Rapport sur un memoire de M. Blanchard, relatif a l' organization d' un parasite voisin des Sangsues. Observations sur l' organization d' un type de la classe des Arachnides. Recherches sur le systeme nerveuse des animaux sans vertebres. Memoire sur l' organisation d' un animal appartenant au sous-embranchement des Annelés. Recherches faites pendant un voyage en Sicile.

October 3*d*.

Statistics of Coal. By Richard C. Taylor. 8vo. From the Author.

Principles of Zoology. By Louis Agassiz and Augustus A. Gould. 8vo. From the Authors.

Descriptions of new species of Bullia and Marginella. By John H. Redfield. From the Author.

On the distinctive characters of Cypræa reticulata, Martyn, and Cypræa histrio, of Meuschen. By John H. Redfield. From the Author.

Expedition Shells, described for the work of the United States Exploring Expedition. By Aug. A. Gould, M. D. From the Author.

Proceedings of Boston Society of Natural History. Vol. 2. pp. 33—48. From the Society.

Memoir geographical, political, and commercial, &c., on Siberia, Manchuria, and the Asiatic islands of the Northern people, &c. By Aaron H. Palmer. From the Author.

Geographical Memoir on Upper California. By John C. Fremont. From the Author.

Third Annual Report on the Geology of Vermont, 1847. By C. B. Adams. From the Author.

Report of the Secretary of War accompanying a report and map of the examination of New Mexico. By Lieut. J. W. Abert. From the Author.

The following were deposited by Dr. Wilson:

Faune Française. Plates. 4to. 3 vols.
" " Text. 8vo. 3 vols.
Wood's Index Testaceologicus and Supplement. 1 vol. 8vo.
Ferussac's Natural History of Mollusca, continued by Deshayes. 34 Livs. folio; with Natural History of Aplysians, by Sander Rang.
Belanger's Voyage to the East Indies. 21 Livraisons. 4to.
Revue Zoologique. Nos. 3, 4, 5, for 1848.
Comptes Rendus. Tome 27. Nos. 1, 2, 3.
Gray's Genera of Birds. No. 45.
Doubleday's Genera of Lepidoptera. No. 21.
Hanley and Forbes' British Mollusca. No. 8.
Reeve's Conchologia Iconica. No. 65.
Harvey's Phycologia Britannica. No. 32.
Hussey's British Mycology. No. 17.
Annals and Magazine of Natural History. No. 8.
Gosse's Illustrations of the Birds of Jamaica. No. 5.
Quarterly Journal of Geological Society of London. No. 15.

Couch's Cornish Fauna. Nos. 1, 2, 3.

Delabeche's Report on Cornwall, Devon, &c.

Bolton's Harmonia Ruralis. 1 vol. Small Folio.

Forster's Zoologica Indica. 1 vol. 4to.

Barbuts' Genera Vermium. Parts 1 and 2. 4to.

Walker's Testacea minuta rariora. 1 vol. 4to.

Fortpflanzungsgeschichte der gesammten Vögel, &c. Von V. A. L. Thieneman. Leipzig, 1846. Nos. 1, 2, 3.

October 10*th.*

Directions for making anatomical preparations, &c. By Usher Parsons, M.D.. 8vo. Deposited by Dr. Griffith.

Turton's Manual of British Shells. 12mo. From the same.

Lead Pipe, its dangers; a rejoinder to the reply of Prof. Horsford to the argument in the appendix to Tanquerel. By Samuel L. Dana. From the author.

Journal of the Linnean Association of Pennsylvania College. Vol. 4. No. 12. From the Association.

October 17*th.*

Ancient Monuments of the Mississippi valley. By E. H. Squier, and E. H. Davis, M. D. (From the Smithsonian contributions to knowledge.) 4to. Deposited by Dr. Wilson.

Comptes Rendus, Tome, 57. Nos. 4, 5, 6. From the same.

October 24*th.*

The following pamphlets were presented by Dr. Bennett Dowler, of New Orleans:

Researches on Meteorology. By Bennett Dowler, M. D., of New Orleans. A question of originality settled; by the same. Contributions to the Natural History of the Alligator; by the same. Experimental researches on the post-mortem contractility of the muscles; by the same. Criticisms and controversies relating to the nervous and muscular systems; by the same. Review of Mr. Solly's book on the Brain; by the same. Researches on Yellow Fever; by the same.

November 7th, 1848.

Vice President MORTON in the Chair.

Letters were read:

From Dr. Charles Nicholson, dated Sydney, New South Wales, April 5th, 1848, acknowledging the receipt of his notice of election as a correspondent, and announcing that he had forwarded for the Academy, collections of Shells, Insects, and other objects of natural history of that country.

From Prof. Th. Lacordaire, of Liege, dated April, 1848, accompanying a copy of his recent work, "Monographie des Coléoptères subpentamères de la famille des Phytophages," in two vols. 8vo., for which he desired in exchange a copy of the Proceedings of the Academy, which was accordingly ordered.

By permission of the Society, a report was read from the Committee on Mr. Pease's paper on the Geology and Natural History of Mexico, recommending the same for publication in the September and October No. of the Proceedings, which was adopted.

November 14th, 1848.

Vice President MORTON in the Chair.

Letters were read from Hugh E. Strickland, Esq., dated Oxford, England, October 26, 1848, and from Edward Tuckerman, Esq., dated Cambridge, Mass., November 10, 1848, severally acknowledging the receipt of their notices of election as Correspondents.

Dr. Gambel called the attention of the Society to a fine collection of Skins of Quadrupeds, collected by Dr. John K. Townsend during his late tour to the Rocky Mountains, Sandwich Islands, &c., which the latter offered to dispose of to the Academy. On motion the subject was referred to the Curators.

Dr. Morton exhibited an antique silver image from Peru, sent to him by William A. Foster, Esq., of Lima, the head of which was moulded into the remarkable conical form, characteristic of the crania of the people of that country.

Dr. Morton also stated that he had received information of the discovery of the *Megalosaurus* in the cretaceous formations of New Jersey.

November 21st, 1848.

Dr. BRIDGES in the Chair.

A letter was read from Dr. Thomas Horsfield, dated Library of East India Company, London, November 2, 1848, acknowledging the receipt of a copy of the Journal of the Academy, and stating that the casts of Sivalik Fossils lately presented by the Hon. E. I. Company to the Academy, which had been mutilated in the transportation, would be replaced by others, which were already in course of preparation.

A communication was read from the Secretary of the American Philosophical Society, dated October 21, 1848, acknowledging the receipt of No. 2, New Series, of the Journal of the Academy.

November 28th, 1848.

MR. VAUX in the Chair.

The Committee appointed to superintend the printing of the New List of Members and Correspondents, reported that they had performed that duty, and that copies were ready for distribution. The List comprises the names of 70 life members, 80 contributing do., 33 non-contributing do., and 62 deceased do., total 245; and of Correspondents, foreign 257, (42 deceased) and domestic 263, (45 deceased) total 520. Total Members and Correspondents to Oct. 1, 1848--765.

The Committee to whom was referred Professor Johnson's letter in reference to a memorial to Congress recommending the addition of one or more Naturalists to the Astronomical expedition now being fitted out for Chili, by order of the Government, *Reported*, that they consider this addition as of great importance, and would recommend the appointment of a Committee, with authority to take such steps in the matter as may be necessary to ensure this result. Report adopted, and on motion, the whole subject was referred to the same Committee, viz: Dr. Morton, Dr. Bridges, and Mr. Vaux.

December 5th, 1848.

MR. PHILLIPS in the Chair.

A letter was read from the Secretary of the Smithsonian Institution, transmitting the first volume of their "Contributions to Knowledge," with a Circular describing the plan of organization of the Institution, and a printed list of queries addressed to the Librarian of the Academy in relation to the Library.

A letter was also read from the Imperial Society of Naturalists of Moscow, dated August 17, 1848, accompanying several numbers of the Bulletin of that Society.

Dr. Leidy offered the following observations on the development of bone, the structure of articular cartilage, and on the relation of the areolar tissue with muscle and tendon.

1. *On the development of the Purkinjean corpuscle in bone.*—Schwann, in his "Mikroskopische Untersuchungen," considers that the Purkinjean corpuscle of bone is derived from the pre-existing cartilage cell, and that the canaliculi are prolongations, or protrusions of the cell wall. Many later authors, among whom are Gerber, and Todd and Bowman, express the opinion that it originates in the nucleus of the temporary cartilage cell, and Tomes entertains the idea, that after the formation of the osseous tubes, in the process of ossification, the latter are

filled up by a deposite of osseous granules, and while this deposite is going on, small cells are left, which are the rudimentary Purkinjean corpuscles. Henle thinks them to be the cavities of cells, the thickened walls of which are pierced by the canaliculi. Hassall confirms the view of Schwann, by stating "the bone cells (Purkinjean corpuscles) are to be regarded as complete corpuscles, the canaliculi of which are formed by the extension of the cell wall, which is proved by watching the formation and development of bone."

The opinion of Schwann and Hassall I can fully corroborate from my own observations upon an ossifying frontal bone, from a human embryo measuring two inches from heel to vertex. Each lateral half of the bone is about 3½ lines in diameter, and presents to the naked eye the appearance of a delicate and close net-work, arising from the numerous areolæ occupied by temporary cartilage. The frontal and orbital plates, it is worthy of incidental remark, at this period, are nearly on a plane with each other, or are connected together at a very obtuse angle along a central, transverse, crescentic, raised line, the rudimentary supra-orbitar ridge.

The mode of development of the Purkinjean corpuscle, as noticed upon the upper or posterior border of the os frontis, is briefly as follows: After the primitive ossific rete has been formed from the deposite of the osseous salts, enclosing groups of cartilage cells in the areolæ, the further deposite takes place in a fibrous or line-like course from the parietes of the areolæ of the primitive osseous rete, in the interspaces of the cartilage cells nearest to, or in contact with the sides of the areolæ. At this period the cells shoot out or extend their canaliculi between the fibrillæ just formed, and then the cell-wall and continuous walls of the canaliculi fuse with the translucent, homogeneous, or hyaline substance of the cartilage existing between the cells and the osseous fibrillæ, and with the fibrillæ themselves, by the deposite of the osseous salts. The period of the formation of the canaliculi appears to be quite definite, occurring during the deposite of the osseous salts, and not before. To such an extent is this the case, that I noticed in several instances cells which had formed their canaliculi upon the side which was ossified, while upon the other side I could not distinguish any trace of them.

During the whole time of the formation of the Purkinjean corpuscle, the nucleus remains unchanged; at least no change is perceptible in it beneath the microscope, and by applying tincture of iodine to the preparation, which turns the nucleus brown, I was able to detect it within the perfected Purkinjean corpuscle, not only corresponding to the nucleus of the remaining unossified cartilage cells in granular structure, but also in its measurements. After the Purkinjean corpuscle has been formed a short time, the nucleus dissolves away or disappears.

The newly formed Purkinjean corpuscle is about the same size as the remaining unossified cartilage cells, as indicated in the list of measurements appended to these notes.

Size of cell of temporary cartilage, from the unossified os frontis of a human embryo, $\frac{1}{1806}$ of an inch; nucleus of do. $\frac{1}{3125}$ of an inch; nucleolus $\frac{1}{\text{[illegible]}}$ of an inch; Purkinjean corpuscle $\frac{1}{1865}$ of an inch; nucleus within the same $\frac{1}{3125}$ of an inch.

2. *On the intimate structure of articular cartilage.*—As is familiar to every anatomist, articular cartilages always fracture in a direction perpendicular to

their surface, the broken edge presenting a striated appearance in the same direction. This character the older anatomists ascribed to a fibrous or columnar structure of the cartilage, like that of the enamel of the teeth, while histologists at the present day consider it as dependent upon the vertical arrangement of the rows of cartilage cells, although it has been suspected to depend upon some ultimate arrangement of the matrix or intercellular substance not yet detected. In some late observations upon the structure and development of articular cartilage, through means of an excellent microscope, made for me by Messrs. Powell & Lealand, of London, I have been enabled to discover a definite structure in the intercellular substance. This consists of an arrangement of exceedingly fine, transparent filaments, nearly uniform in thickness, and having an average measurement of the $\frac{1}{23000}$ of an inch. An easy method of detecting this filamentous structure, is to tear a fine fibre from the broken edge of an articular cartilage which has been macerated in diluted muriatic acid, by means of a fine-pointed forceps, and exposing it in the ordinary way in water beneath the microscope, using the quarter or eighth inch objective power. The fine filaments, partly detached, will be seen in great numbers along the sides of the fibre. When these filaments are viewed by very oblique light, they appear to have an indistinct granular appearance, each composed of a single row of granules, which of course, in the articular cartilage, adhere together with greater tenacity in the direction of the length of the filaments than laterally.

When an articular cartilage is broken in a direction from the under to the free surface, it is found that the fragments adhere by a membranous layer, covering the free surface of the cartilage, which, by the older anatomists, was considered as the extension of the synovial membrane; by the anatomists of our day, either as a homogeneous layer, or as nothing more than a stratum of the cartilage, the rows of cells of which take a direction parallel with the surface, or at right angles to those more deeply situated, and thus giving rise to this distinct laminated condition. That it is a cartilaginous layer is undoubtedly correct, but instead of the rows of cells determining the arrangement, I find it depends upon the filamentary structure of the matrix, the filaments taking a course parallel with the surface of the cartilage, in a direction at right angles to those forming the matrix of the deeper part of the cartilage.

A straight fibre may be torn from the articular cartilage, and in the act tearing, should a row of cells be in the line of rupture, as is frequently the case, (for although generally following the course of the filaments, yet a number are oblique or even somewhat irregular,) it will be torn through, which in itself would be sufficient to indicate that the fibrous arrangement of the cartilage did not depend upon its rows of cells, and indeed they have but little or no influence in this respect.

From the foregoing description of the structure of the intercellular substance of articular cartilage, it can be readily understood that it may determine the course of the rows of cells, which is really the case. In the earliest period of the existence of the articular cartilage, the cartilage cells are single, isolated, and equally diffused throughout a mass of hyaline substance, which latter in the progress of development becomes indistinctly granular, and then for the first time have I observed the appearance of the filamentary structure. In the splitting up of the primary cartilage cell and development of others, they arrange themselves in the direction in which there is least resistance, which would be of course in the direction of the filaments of the intercellular matrix. Hence, in the deeper part of the articular cartilage, the rows of cells are generally vertical to the surface, and parallel to the same in its more superficial portion.

In some of the articular cartilages sometimes there are peculiarities of structure which I think have never been pointed out, and are worthy of notice.

In the articular cartilage of the condyles of the os femoris, I have occasionally noticed numerous minute lacunæ? found in greatest abundance near the surface of attachment, and gradually decreasing in number until they entirely disappear in the superficial third of the cartilage. They are elongated, compressed, and their long diameter is invariably situated transversely, at right angles to the filamentous matrix, or parallel with the surface of the cartilage. The longest measure transversely $\frac{1}{1200}$ of an inch the shortest $\frac{1}{3125}$ of an inch, in the vertical direction $\frac{1}{6250}$ of an inch. When well defined, they appear more transparent than the cartilaginous matrix in which they are situated; when viewed a little within the focus they appear deep black.

Fibres of bone are not unfrequently met with in the articular cartilages, especially in that of the head of the os femoris. They are generally found near the surface of attachment, but are not the continuation of the bony structure upon which the cartilage is placed, for they are always arranged in a direction parallel to the surface. They are compressed cylindrical in form, and in transverse section present an elliptical figure, the long diameter of which is placed at right angles to the filaments of the cartilage matrix. They present a concentrically laminated and a radiated structure, resembling somewhat that of the Haversian ossicle, but they neither present the canal nor the Purkinjean corpuscles.

The foregoing observations on articular cartilage will be more detailed and illustrated by figures hereafter, in one of our medical journals.

3. *On the arrangement of the areolar sheath of muscular fasciculi and its relation to the tendon.*—Well known is it that the fasciculi of fibres of the muscles are surrounded by sheaths of areolar tissue, but the arrangement of the filaments of fibrous tissue forming the sheaths, and their relation with the tendon, I think has not been properly pointed out. From repeated observations, I have found that the filaments of fibrous tissue cross each other diagonally around the muscular fasciculi, forming a doubly spiral extensible sheath. None of the filaments run in the direction of the length of the fasciculi, and but few are transverse. Many of the filaments of a sheath form an interlacement in the same diagonal manner with the filaments of the sheaths of neighbouring fasciculi. This arrangement is readily distinguished, if several fasciculi be drawn slightly from each other upon a plate of glass, and the intervening areolar tissue be viewed beneath the microscope. When the filaments reach the rounded extremities of the fasciculi, they become straight, and in this manner conjoin with the tendinous filaments originating at the extremities of the muscular fibres. The importance of this arrangement can be readily understood: from the diagonally crossing course of the areolar filaments, comparatively inelastic in themselves, the sheath is rendered elastic, thus permitting the muscular fibres freely to move without their action being interfered with, while at the point of attachment of the fasciculi, where any elasticity would be worse than useless, from the fact that part of the

muscular action would be lost in the mere extension of an elastic substance, we find the filaments arrange themselves so as to become part of the inextensible tendon.

December 12*th*, 1848.

DR. BRIDGES in the Chair.

A letter was read from the Secretary of the American Academy of Arts and Sciences, dated Cambridge, Mass., December 7, 1848, transmitting Vol. 3, New Series, of its Memoirs.

Also a letter from Major Proby T. Cautley, dated Roorkhi, India, June 23, 1848, in relation to two boxes of fossils shipped by him in 1844 for the Academy.

Mr. Conrad presented a paper entitled, "Descriptions of two new genera and three new species of recent Shells," &c., which was referred to Drs. Griffith, Wilson, and Leidy.

December 19*th*, 1848.

MR. PHILLIPS in the Chair.

A letter was read from Lieut. J. M. Gilliss, U. S. N., dated Washington, December 11, 1848, acknowledging the receipt of his notice of election as a Correspondent.

Mr. Conrad read the descriptions of four new species of recent Shells, as an addition to his paper presented at last meeting. Referred to the same Committee.

Dr. Gambel presented a Catalogue of the family Columbidæ contained in the collection of the Academy, with remarks on the same; which was referred to a Committee, consisting of Mr. Cassin, Dr. Wilson, and Dr. Townsend.

Mr. Cassin read a paper entitled "Descriptions of new species of Owl," in the collection of the Academy of Natural Sciences of Philadelphia. Referred to Drs. Wilson, Gambel, and Townsend.

Dr. Gambel read a paper entitled "Contributions to American Ornithology," which was referred to Mr. Cassin, Dr. Townsend, and Dr. Heerman.

Dr. Hallowell read the description of a new Salamander, from California. Referred to Dr. Leidy, Dr. Gambel, and Dr. Bridges.

On motion it was unanimously *Resolved*, That the Publication Committee be authorized to present to Dr. William Blanding a copy of Parts 1 and 2, New Series, of the Journal of the Academy.

December 26*th*, 1848.

Dr. Bridges in the Chair.

The Committee to whom was referred Mr. Conrad's descriptions of new Shells, read 12th and 19th insts., reported in favour of publication entire in Part 3, New Series, of the Journal, and the following abstract in the Proceedings.

Description of two new Genera and new species of recent Shells, &c.

By T. A. Conrad.

Parapholas, *Con.*

Shell pholas-like; accessory valves two, nearly similar in form, elongated, one extending from the umbo to the posterior extremity; the other united to the base; hinge plate thick; adductor muscular impressions greatly elongated.

Pholas californica, *Con.* Jour. Acad. Nat. Sc., vol. 7, p. 236 pl. 15, fig. 35.

Cryptomya.

Shell bivalve, closed or very slightly gaping posteriorly; hinge similiar to that of Mya; pallial impression without a sinus, forming a right angle posteriorly.

Sphænia californica, *Con.* Jour. Acad. Nat. Sc., vol. 7, p. 234, pl. 17, fig. 11.

Lyonsia floridana.

Osteodesma hyalina? *Con.* Proceed. Acad. Nat. Sc., vol. 3, p. 24, pl. 1, fig. 7.

Leguminaria floridana.

Solecurtus fragilis, var. *Con.* Proceed. Acad. Nat. Sc., vol. 3, p. 24, pl. 1, fig. 10.

Plectolithes, *Con.*

Plectostylus hildrethii, *Con.* Vol. 8, p. 275, pl. 17. fig. 2.

Triton nobilis.

Body whorl dilated, humped on the upper part, about which three of the ribs are prominent, rounded; the lower one broadest. Length 11 inches. Width 5¾ inch. (West Indies.)

Triton variegatus, Reeve. Conch. Icon. pl. 1, fig. 3a.

Psammobia californica, Journ. Acad. Nat. Sc., vol. 7, pl. 19, fig. 3.

The Committee on Mr. Cassin's descriptions of new Owls, reported in favour of publication.

Descriptions of Owls, presumed to be undescribed, specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia.

By John Cassin.

Ephialtes *sagittatus*, nobis. Adult? Entire plumage above rufous brown, inclining to chestnut; plumage of the head with small pale spots encircled with black, bordering the shafts of the feathers, and near the tips assuming a hastate or sagittate form.

Plumage of the back with every feather having about three to five spots of the same description, the arrow-headed shape and black border distinct and well defined, some of the spots nearly white; every feather also with very fine transverse lines, and minutely dotted or freckled with black.

Wing coverts with pale, nearly white, sagittate spots encircled with black. Internal coverts of the wings pale fawn yellow, more or less spotted with black, and with their tips broadly terminated with black, which forms a conspicuous bar on the inferior surface of the wing. Outer edge of scapulars nearly white with black spots. External webs of primaries with alternate bands of pale and darker rufous brown; internal webs much darker, with nearly black bands alternating with others slightly paler, which (the paler) are mottled with black towards the extremities of the quills. Exposed ends of the secondaries rufous brown, with large pale spots on the shafts, approaching the sagittate form, with their black borders extending into transverse narrow bands. First primary shortest, fifth and sixth longest.

Feathers encircling the eyes, and the long bristle-like feathers at the base of the bill dark chestnut brown, the latter freckled with black; between the eye and the cavity of the ear whitish, with transverse lines, and broadly tipped with deep rufous brown. Feathers of the ruff white at their bases, with narrow transverse lines of deep rufous, but presenting a broad subterminal band of pure white, every feather terminated with a semicircular or lunular band of bright rufous brown.

Front and superciliary region white, the feathers of the former with their shafts and with some minute marks of very dark brown, superciliary feathers with well defined tips of nearly black. Shorter (or anterior) feathers of the ear-like tufts white, with minute transverse lines and freckles of rufous brown, longer feathers of the tufts brown on their external and white on their internal webs, transversely lined and tipped with darker brown.

General colour of the under surface of the body very pale rufous and sordid yellowish white, on the breast with every feather having about five to seven very narrow transverse bands more or less distinctly defined, of blackish brown, and minutely and irregularly dotted with the same colour. Abdominal region with the bands less numerous, and many of the feathers having several irregularly shaped, though rather rounded and sagittate spots of nearly black.

Tarsi covered to the toes with pale rufous whitish feathers. Toes naked.

Tail same rufous brown as the back, with alternate bands of darker and paler shades, in some instances the paler band on the external opposite to the darker band on the internal web.

Bill and feet yellow, claws long and slender.

Total length of skin, about 10 inches, wing 7, tail 4¼ inches.

Very young. Upper surface of the head and body pale yellowish and sordid rufous, every feather with several narrow transverse dark lines. Breast and belly darker, with the spots more distinctly rounded and occupying the whole breast and inferior surface.

Wings and tail more fully developed than the other plumage.

Hab. India?

One specimen of this species, without label, belongs to the Rivoli collection; another, which is that of a young bird, labelled Malacca, has been received from Mr. Edward Wilson, who obtained it in Paris. I am acquainted with no species of *Ephialtes* with which this can readily be confounded, and, in fact, it looks more like Dr. Horsfield's plate of *Strix* (*Phodilus*) badius, than any other which

I have met with, and is about the same size, (as the figure,) while in general appearance, particularly in the colouring of the breast and belly, it bears some resemblance to *Strix* (*Lophostrix*) *cristata*, Daud., (*griseata*, Lath.) It is, however, a true *Ephialtes*, though an aberrant species. The sagittate spots distinguish it, and as far as I know are peculiar.

EPHIALTES *Watsonii*, nobis. Summit of the head black, with a few very minute pale spots, more numerous on the front and eyebrows. Shorter feathers of the ear tufts black, others black also, but with their inner webs spotted or mottled with white. A semicircle above the eye extending to the ear tufts, black; rigid feathers at the base of the bill black, with pale grayish terminations; feathers immediately below the eye gray, mottled and broadly tipped with black.

Discal feathers grayish white, many of them speckled, and all tipped with black, presenting a white and black semicollar or ruff on each side of the neck. Plumage of the throat with fine alternate bars of black and nearly white.

Neck above with a well defined collar, the feathers composing which are strongly fulvous, terminated with white and speckled with black.

Back, rump, tail, and wing coverts mottled and freckled with grayish white upon a black ground, many of the feathers having about three to five very irregular transverse bands of whitish; on the wing coverts and back some of the pale marks are almost circular with black centres, others are of irregular form also enclosing centres of black.

External webs of the primaries black, with subquadrate nearly white bars, nearly all of which have black centres, assuming, also, a more or less well defined square form. Internal webs of primaries with alternate bands of different shades of black.

Breast and entire inferior parts pale fulvous, every feather conspicuously marked on the shaft longitudinally with black, and with very irregular transverse bands and irregularly mottled with black; the black markings most numerous and most irregular on the breast. Many of the feathers on the breast with very pale nearly white spots, having somewhat the appearance of being distributed in pairs.

Tail black, with about seven or eight narrow irregular grayish bands, many of which have central lines of black.

Tarsi feathered to the toes, pale fulvous white, mottled with black.

Bill horn colour at the base, whitish at the tip.

Total length (of skin) about 9½ inches, wing 7, tail 3½ inches.

Younger? Plumage above paler, with small spots and minute freckles of grayish white, scarcely assuming the appearance of bands.

Breast with the dark markings predominating, and tending to form a broad pectoral band; lower parts of the body bright fulvous, with black marks.

Hab. South America.

This species bears some resemblance to *Ephialtes atricapilla*, (Natt.) Temm. pl. col. 145, but is much larger, and has only one nuchal collar. The general colour above is also much darker; the fulvous colouring of the inferior surface of the body is also a striking difference.

One specimen of this species in the Rivoli collection is labelled "Orenoque," and another in the collection of the Academy is probably from South America.

I have named this bird in honor of Gavin Watson, M. D., of this city, a gentlemen of extensive knowledge of natural history, much attached to the study of the American Raptores, and an especial admirer of the Owls.

SYRNIUM *albo-gularis*, nobis. Entire plumage above deep umber brown, every feather more or less finely vermiculated and minutely spotted with black; on the head also transversely lined and spotted with pure white, especially in the region of the occiput, where upon some feathers the white spots are disposed regularly in pairs, upon the opposite webs.

Feathers of the back and rump having also three or four irregular transverse lines, and irregularly spotted with pale brownish nearly white. Scapulars broadly barred and edged with white.

Lessser wing coverts with irregular lines of pale brownish, and with large white marks on their external webs. Primaries with their external webs nearly black, with about eight to twelve square spots or bands of fulvous. Internal webs of primaries plain black or with obscure bands.

Eyebrow white; a large semicircular segment of white covering the jaws and throat, interrupted at the base of the under mandible by a few brownish feathers; many of those white feathers conspicuously tipped with black, forming a well defined semicircular discal collar, or ruff.

Breast with a broad band of same umber brown as the back, every feather irregularly lined and minutely spotted with black, many of the feathers also with subrounded spots of pure white, occasionally disposed in pairs.

Abdomen, flanks, and under tail coverts fulvous, every feather marked longitudinally with black, and about one to three transverse marks of the same colour, assuming a partially lyrate form; these marks less distinct on the flanks.

Tail umber brown, with about eight to ten irregular pale brownish white bars: under surface paler.

Plumage of the tarsi reaching nearly to the toes, pale reddish fulvous; tibial plumage darker, inclining to ferruginous; toes naked.

Bill yellow.

Total length about 9½ inches, wing 8, tail 4½ inches.

Hab. South America.

Two specimens of this bird in the Rivoli collection are without label, a third obtained in Paris by Mr. Edward Wilson is labelled "South America."

I am acquainted with no species which in any considerable degree resembles the bird now described, nor have I met with a description applicable to it.

SYRNIUM *virgatum*, nobis. Plumage of the entire upper surface dark umber brown, every feather having about three to five irregular transverse narrow bands of sordid yellowish white, most numerous and distinct on the head and rump. Upper tail coverts banded with pure white.

Scapulars obliquely banded on their outer webs with fulvous, on their inner webs more or less regularly banded with yellowish white. Wing coverts with broader bands, and also mottled and pointed at their tips with whitish.

Primaries very dark brown, nearly black, external webs with about seven square spots of grayish white, some of which enclose central spots of dark brown, and all more or less dotted and mottled with the same colour. These square spots less regular on the first and second primaries; all the primaries with broad pale tips. Internal webs with regular bands of dark and paler brownish black.

General colour of the face same as the head and back, superciliary plumage and discal circle nearly white, more or less spotted and lined with deep brown.

Breast deep umber brown tinged with fulvous, every feather having about three very irregular transverse bands, which are broader and paler than those of the back, though of the same character; on the lower part of the breast these bands are nearly white.

Abdomen pale fulvous, every feather with a longitudinal stripe of black, and with one or two transverse irregular bands at the tip of the same colour, ventral region and under tail coverts pale fulvous, nearly white, with a trace of blackish spots.

Tarsi dark fulvous, mottled with brown; feathered to the toes.

Tail black, tipped with white, and having about five bands, which are brownish on the outer and white on the inner webs.

Bill horn colour at the base, pale yellow at the tip, toes quite naked.

Total length about 14 inches, wing 10½, tail 6 inches.

Younger or different sex? Pale bands on the superior surface of the body broader, those on the wing coverts, primaries and secondaries, enclosing tolerably regular bands of black. Scapulars with their outer webs fulvous and pure white.

Spots on the outer webs of the primaries, and bands on the tail nearly white, secondaries broadly tipped with white, each terminal spot enclosing a segment of dark brown.

Entire inferior surface of the body fulvous, feathers having longitudinal stripes only of dark brown; under tail coverts nearly pure white.

Younger? Bands on the back and rump almost obsolete, having the appearance of spots only. Scapulars and some of the wing coverts broadly edged with pure white.

Entire under surface of the body nearly white, with but a tinge of fulvous, the feathers having longitudinal bands only of deep brown. Under tail coverts and tarsi nearly white.

Total length about 14 inches, wing 9½, tail 6 inches.

Hab. South America.

This is a bird of which I have frequently seen specimens, and am surprised that I have not succeeded in finding a description of it. I am acquainted with no species intimately resembling it.

The Committee on the following paper by Dr. Hallowell, reported in favor of publication.

Description of a new species of Salamander from Upper California.

By Edward Hallowell, M. D.

Salamandra lugubris.

Sp. Char.—Head large, eyes very prominent, tail rather longer than the body, which is cylindrical. Head, tail, extremities, and the rest of the animal dark olive above, lighter beneath; an indistinct irregular row of yellowish spots on each side. Several small spots of the same colour upon the neck and upper part of the tail, and posterior extremities.

Description.—Head large, swollen at the temples, depressed in front; snout obtuse and somewhat rounded; eyes large, latero-superior; nostrils latero-anterior, (small and distant; the palate is provided with two transverse rows of teeth situated immediately behind the posterior nares,) which are incurvated internally, and meet posteriorly. There is also a longitudinal row of teeth, separated from those described by an interval of half a line; tongue long and spatulate, very free at its edges, attached by a pedicle at its anterior extremity; neck somewhat contracted, without a gular fold; body and extremities slender, the posterior larger than the anterior; tail compressed, cylindrical, tapering to a point.

Colour. (From a specimen in spirits in the Museum of the Academy.) The animal above is of an uniform dark olive colour; an irregular row of small yellowish spots are observed upon the sides of the body near the dorsum; several are also seen upon the neck, the upper part of the tail, and also the posterior extremities in the specimen examined. The under part of the animal is light olive.

Dimensions.—Length of head 6½ lines; greatest breadth 6 lines; length of neck and body to vent 1 inch 11 lines; length of tail 2 inches 1 line; total length 4 inches 7 lines.

Habitat.—Monterey, Upper California. It is said to be abundant in that region.

The Committee on Dr. Gambel's paper, entitled "Contributions to American Ornithology," reported in favour of publication.

Contributions to American Ornithology.

By William Gambel, M. D.

Rostrhamus sociabilis, (Vieill.) D'Orb.
Herpetotheres sociabilis, Vieill. Nouv. Dict. Hist. Nat., vol, 18, p. 318.
F. hamatus, Illiger. Temm. Pl. Col. 61, et 231.
Cymindis hamatus, Auc.

The first discovery of this curious and interesting falcon, within the limits of our fauna, is due to the ornithological zeal of Edward Harris, Esq., of New Jersey, who exhibited to the Academy a specimen obtained by himself on the Miami river of Florida, in May, 1844, which, together with many new and rare birds obtained during his travels with Audubon on the Upper Missouri, he has since generously added to our rich collections. My friend Dr. A. L. Heerman has given me one of four specimens obtained in a recent trip to Florida, with the following memorandum. "On Saturday, May 6th, while fishing in the everglades near the source of the Miami river, I shot four of these birds, of which two were females and the others young; the latter showing by their plumage that they had been bred in the country. On dissecting them, I found their stomachs filled with a species of snail, which lives on the rank grasses of the everglades. They seemed unaware of danger, and were sailing together in the manner of the Mississippi Kite. I also saw on the 8th of May, seven of these birds in the air over Col. English's plantation, who informed me that it was by no means a rare bird in that part of the country."

All the specimens are in immature plumage, and vary considerably. They are above dark brown, beneath dull white, much blotched with brown: the shoulders, and under wing coverts particularly, strongly tinged with ferruginous. The front and throat are sometimes nearly pure white, but generally tinged with ferruginous and streaked with brown.

The plumage of the adult, is of a nearly uniform blackish brown, with the tail at its base, and upper and under coverts pure white.

VIREO ALTILOQUUS, (Vieill.) Gray.

Muscicapa altiloqua, Vieill. Ois. d'Amer. Sept. Vol. 1, p. 67, pl. 38; Edwards' Nat. Hist. Bds. pl. 253; *Vireo longirostris*, Swains.; Faun. Bor. Amer. Bds. p. 237; Nutt. Man. Orn. vol. 2. p. 278; *V. olivaceus*, Gosse, Bds. of Jamaica.

Though long since suspected by Nuttall as occasionally straying into the forests of the Southern States, this species has only recently been actually detected by Dr. Heerman in the peninsula of Florida. He found it rather common about Charlotte Harbour, and procured several specimens. In their search for food he observed them clinging to the branches with the back downwards, and found their stomachs filled with coleopterous insects and flies.

EGRETTA PEALEI, (Bonap.) Gamb.

Ardea Pealei, Bonap. Amer. Orn. vol. 4, pl. 36; Nutt. Man. Orn. vol. 2, p. 49; *A. rufescens*, young, Aud. Bonap. Gray.

Peale's Egret has, I am satisfied, been too hastily considered as the young of the Reddish Egret, strange to say, even by Bonaparte himself,* who, in the article upon that bird in the continuation of Amer. Orn., has so well examined the family to which it belongs, and particularly states, that they do not acquire their full plumage until the third year; young birds being always destitute of the peculiar ornamental plumes. Now, the well known fact that the Herons when young do not have the elongated feathers of the adult, is *prima facie* evidence that *E. Pealei* cannot be the young of *E. rufescens*, when it is ornamented with plumes quite as long and full, and neither in bill or any other part shows the slightest trace of immaturity. But to Dr. Heerman we are indebted for the means of settling the question beyond dispute.

---

* Comparative List of the Birds of Europe and North America.

He found them breeding in great numbers at Charlotte Harbour, in Florida, and visited the breeding place three successive times, to assure himself that the young birds are not white, but coloured like the adults, only of a duller hue, and without plumes; as he was also informed by his host. He did not see a single white specimen among hundreds of young birds, and has presented to the Academy the true young of *E. rufescens*.

This specimen which is just fully fledged, with a few woolly feathers yet remaining about the head, is developing the colours of the adult *rufescens*, without a single white feather. But what is most convincing, is, that the bill is entirely dusky, with a mere indication that its base will become pale.

Peal's Egret is a smaller bird and less in its proportions every way. The young also is pure white like the adult, but wants the elongated plumes, and has the bill entirely dusky, the basal portion gradually assuming its pale colour as is seen in a specimen brought by Dr. Heerman.

STERNA FRENATA, Gamb.

S. argentea, Nutt. Man. Orn. vol. 2, p. 280; Bonap. Comp. list of Bds. of Eur. and Amer.; Gray's Gen. Bds. non De Wied.; *S. minuta*, Wilson, Aud. pl. 319.

Nuttall was the first to observe differences between the little Terns of Europe and those of America, and supposed ours to be the same with the *S. argentea* of Brazil, described by the Prince de Wied. Having specimens, however, of that species in the collections of the Academy, I find it very distinct from either, and readily distinguished by its very much larger, thicker bill, longer, differently coloured wings, shorter tail, &c.

Like all the closely allied species of Europe and North America, which differ not so much in colour as in form and proportion, the little Terns of the two continents resemble each other so closely, that it is difficult to determine specific characters. But as those species which inhabit a wide range in either country, and not confined to the northern regions, are nearly always found distinct, so the little Terns, extending as they do to the tropics, and not having been as yet found in the arctic regions, should also, according to the laws of geographical distribution, be different.

Some of the distinctions drawn by Nuttall I think will be found dependant on age. The bill in specimens which I have compared of the American is shorter and smaller in its measurements every way, the wings and tarsi are also shorter, and the outer tail feathers more acuminate than in the European, but still I should have hesitated to give it a new name, had it not been considered different by several ornithologists and erroneously referred to *S. argentea* of De Wied.

STERNA REGIA, Gamb.

S. cayana, Aud. pl. 273, Orn. Biog., vol. 3, pl. 505; Bonap.; Giraud, Bds. Long Island, p. 355; S. cayana, Lath. ?; *S. erythrorhynchos* De Wied, Bey. Zur. Natur. Brazil ?

Adult male.—Length, 19 inches: extent of wings, 3 ft. 9 in.: length of wing, 15 in.: outer tail feathers, 7½ in.: tarsus, 1 inch and 2-10ths, black: bill bright red, along the ridge, 2½ in.: from corner of the mouth, 3½ in.: from symphysis to point, beneath, 1 inch: depth at commencement of feathers, 7-10ths inch.

This noble species so abundant on our southern coast, has for a long time been considered the *S. cayana* of Latham, notwithstanding its disparity with his description both in size and coloration. It seems to me that the Cayenne Tern must have been founded upon the immature plumage of one of the yellow-billed species of the Brazilian coast, since described by Lichtenstein, probably the *S. magnirostris*.

Young birds of our species would agree pretty well with the *erythrorhyncha* of Brazil, described by the Prince De Wied, as they are somewhat smaller and less proportioned, yet we hesitate to give it that name, until its identity can positively be proved, particularly as the Terns of that coast are peculiar.

The representative of the *regia* in the old world, is the *S. velox* of Rüppell, though quite distinct.

STERNA ELEGANS, Gamb.

Adult male.—With the general plumage of *S. regia;* length 17 in.; of wing 12½ in.: of outer tail feathers 6 and 8-10ths in.: tarsus 1 and 1-10th in.: middle toe and nail 1 and 2½-10ths in.: bill bright red, along the ridge 1 and 6-10th in.: from corner of mouth, 3 and 3-10ths in.: from symphysis to point beneath 1½ in.: depth at commencement of feathers 5-10ths in.

This elegant species differs from the former not only in proportions, but in the delicate hue of the under parts, which are of a satiny cream color when living, but faded very much in the dried specimen.

The bill is of the same color as in the *regia*, and as long, but much more slender; the prominent angle beneath half an inch farther from the point, and the depth at base two tenths of an inch less. Wings two and a half inches shorter, but of the same color in every respect. Legs pure black, the tarsus nearly as long as in the former, but the toes much shorter. Tail long, pure white and deeply forked, whole top of head from the bill, pure black, extending into an ample flowing crest as in the former species.

The representative of this species in the old world is the *S. affinis*, Rüppell, but it differs from that species in nearly the same respects as *S. regia* does from *S. velox*.

I procured this species on the Pacific coast of Mexico, particularly at Mazatlan at the mouth of the Gulf of California. It is exceedingly delicate in its plumage, and graceful in its mode of flight. I found them congregated in numbers on the sandy shoals of the Bay in the month of April, uttering as they flew a grating Kingfisher-like note.

The Report of the Corresponding Secretary for November and December was read and adopted.

The Annual Report of the Recording Secretary was read and adopted.

The Annual Report of the Treasurer was read and referred to the Auditors.

The Librarian read the following report, which was ordered to be published.

REPORT

OF THE LIBRARIAN

For 1848.

The Librarian respectfully presents the following statement for the present year.

The total additions to the Library, of all descriptions, since the 1st of January, 1848, amount to 1349. The subjoined table exhibits the various subjects embraced in this number, with the proportion of volumes, periodicals and serials, and pamphlets in each subject.

	VOLUMES.							
	Folio.	4to.	8vo.	12mo.	Total Vols.	Periodicals and Serials in Parts, Nos., &c.	Pamphlets.	Total.
General Natural History and Mammalogy	9	31	93	21	154	91	40	285
Botany	4	5	38	5	52	57	12	121
Conchology	4	30	35	13	82	133	9	224
Geology	4	3	28	1	36	18	16	70
Helminthology		2			2			2
Ornithology	9	7	23	9	48	36	6	90
Herpetology	1			1	2		3	5
Ichthyology			2	1	3	2	4	9
Entomology	3	4	16	8	31	20	6	57
Mineralogy			1		1		2	3
Anatomy and Physiology	2	7	20		29	1	16	46
Phys. Science and Chemistry		3	12		15		7	22
Medicine		1	1		2		4	6
Transactions of Societies, Annals. Journals, Proceedings of Societies, &c.		41	13		54	101		155
Biography		2	2		4			4
History		1	1		2			2
Antiquities	5	1			6		1	7
Voyages and Travels	21	27	59	2	109	86		195
Geography		1	2		3		4	7
Bibliography			10		10			10
Education			1		1			1
Reports							10	10
Maps								3
Miscellaneous			6		6		9	15

Total.................. 1349

The whole have been derived from the following sources: from authors 79; from editors 24; from members, correspondents, and others 70; from Societies 72; from Dr. Wilson, on deposit, 1029; from Dr. R. E. Griffith, on deposit, 72. Three Charts of the United States coast Survey were received from the Treasury Department, through Prof. A. D. Bache.

The aggregate additions to the Library in 1847, as stated in the report of that year, amounted to 1072, the greatest number in any single year since 1835, when Mr. Maclure's donations were received. The additions of the present year exceed those of 1847 by 277.

The deposits by Dr. Wilson in 1847 were remarkable for their number and value. In their selection also, and in their adaptation to the wants of the Society, which it has always been his chief desire and pleasure to consult, the excellent judgment characteristic of that gentleman was abundantly shown. The obligations then incurred were sufficiently great, but the statement just presented, exhibits a total of additions derived from him this year nearly double that of the last year.

The entire number of volumes, periodicals and serials in parts or numbers, and pamphlets, which Dr. Wilson has deposited to the present date, is as follows:

Volumes, - - - -	Folios 96,	Quartos 212,	Octs. 293,	Duod. 57,	total 658
Periodicals and Serials in parts, nos. &c.	" 428,	" 407,	" 145,	" 17,	" 997
Pamphlets, - - -		" 8,	" 35,		" 43
					1698

To our fellow-member, Dr. Robert E. Griffith, belongs the credit of being the next largest contributor to the Library during the present year, as he was also in 1847. Nearly 250 works have been added by Dr. Griffith within the last two years; many of them highly valuable for their antiquity and rarity.

Among the contributions this year, is a fine copy of Vyse's celebrated and splendid work on the Pyramids of Egypt, in elephant folio, for which the Society is indebted to Dr. Samuel George Morton. To the same gentleman it is also under great obligations for a donation of the first five volumes of the Asiatic Researches. The Academy's series of that important and frequently consulted work is now nearly complete, one volume only being wanting. The Academy had also the singular good fortune to obtain, at the same period, another set of the same volumes, from its venerable President Mr. William Hembel.

Through the liberality of the late Mrs. Elizabeth Stott, of Philadelphia, the Library has been enriched the present year by the addition of Wallich's elegant work, Plantæ Asiaticæ Rariores, in three large folio volumes.

To the different scientific Societies, American and foreign, with which the Academy is in correspondence, its acknowledgments are due for their usual courtesy and attention, in furnishing their transactions and other publications; especially to the Zoological and Linnean Societies of London, the British Association, the Geneva Society, the Asiatic Society of Bengal, the Royal Agricultural Society of Lyons, the Royal Bavarian Society, the Imperial Society of Naturalists of Moscow, the Imperial Mineralogical Society of St. Petersburg, the American Philosophical Society, the New York Lyceum, the Boston Society of Natural History, and the American Academy.

From numerous distinguished correspondents, authors, &c., and from editors of scientific journals, at home and abroad, the Academy continues to receive their valuable publications, regarding them as evidences of the general interest felt in its success, and of their desire to promote its objects and usefulness.

The rapid accumulations from all these sources during the last few years, have now nearly occupied the available space in their present apartment, which, at the time of the removal of the Library into it from the Hall, less than two years ago, was considered ample enough for any ordinary rate of increase for a considerable period. If, therefore, the Society should be so fortunate as to continue to enjoy even a moderate share of that liberality which latterly has been so lavishly bestowed upon the Library, it will become necessary during the ensuing year to decide upon some plan for furnishing additional accommodations for the Books in the adjoining rooms.

A new printed catalogue of the Library, or an appendix to the last, will soon be required. The present catalogue was published in the year 1837, and embraced, according to the report of the Committee appointed to prepare it, 6890 volumes, besides 435 Maps and Charts. The Library has rapidly increased since that date, and at the present time cannot contain less than 10,000 volumes, maps, charts, &c. An accurate enumeration will, however, be made of the works contained in each department, and the result submitted in the next annual report.

Rich as are the collections of works in the Library, on Natural History, Voyages and Travels, History, Biography, Antiquity and the Fine Arts, &c., and liberal as have been the recent additions of Dr. Wilson, we are still greatly deficient in the transactions of foreign learned societies. In this Institution these publications are of indispensable importance for successfully conducting investigations in the different branches of science. From the gratifying testimonials which the Academy continually receives of the estimation in which it is held by distinguished societies abroad, we are encouraged to believe, that a more extended correspondence, and offer of interchange of publications with these bodies, would be followed by the desired result, and the deficiencies promptly supplied.

The design stated in the last annual report of furnishing to the Society a list of miscellaneous works, which it is proposed to reject from the Library, has been unavoidably deferred until next year. The propriety of this measure is generally admitted by the members, the space which these books now occupy being greatly needed for the accommodation of others of more utility.

There are also duplicates of many natural history works of much value, which might be advantageously exchanged. A list of these will also be prepared and presented to the Society at an early period.

WM. S. ZANTZINGER,
Librarian.

Hall of the Academy, December 26th, 1848.

The following Report of the Curators was read by the Chairman, Dr Leidy, and ordered to be published.

REPORT
OF THE CURATORS
For 1848.

The impetus given to the progress of the Academy within a few years by the extensive and valuable additions to its museum and library from several of its members, still continues in full vigor. The treasures of nature are constantly being poured into its stores, sister societies observe us with emulation, and our journal is abundantly supplied with original memoirs on subjects of Natural History.

Since the report of the Curators for 1847 was presented to the Academy, the Eastern and North-East basement rooms, appropriated to part of the museum, have been finished, and the collections in Mineralogy, Conchology, Entomology, &c., have already been nearly arranged in them.

Further accommodations also have been made for the extension of the Ornithological collection in the hall of the Academy, by the construction of a row of foot cases on the outer edge of the upper or third gallery, similar to those previously existing on the same part of the second gallery.

Every department of the museum has been, and continues to be, carefully attended to, and to most of them, additions have been made during the year 1848, of which we will now give a summary.

The Mammalogical collection, in its present condition, numbers 234 mounted specimens, besides a number of skins, all in a good state of preservation. It has received an addition of 16 specimens during the past year, principally from Drs. Watson, Wilson, Goddard, and Mr. Wm. Wood.

The Ornithological cabinet, under the patronage of Dr. Wilson, still continues to be the most extensive department of our museum, as well as one of the richest collections in the world. This gentleman, during the past year has greatly increased it, by the deposit of the second portion of the Rivoli collection, containing 2584 specimens, and the collection known as that of M. Boucier, of France, comprising 1039 specimens. We have also to acknowledge our indebtedness to the liberality of Mr. Edward Harris, for the donation of a collection of rare North American birds, including nearly all the species discovered by Harris and Audubon during the last expedition of those gentlemen to the mouth of the Yellow Stone river. Besides the foregoing, we have received from members and others 14 specimens, several of which are unique, as the Picus Lecontei, from Dr. Jones, of Georgia, &c.

Dr. Wm. Gambel, the Recording Secretary, presented to the Society, a few evenings since, a complete catalogue of the Columbidæ in the Academy's collection. Catalogues of the Vultures and Owls are also nearly ready, and wil appear in an early number of the Proceedings.

To our collection in Oology has been added, through the kindness of Professor Baird, of Carlisle, a donation of eggs of 56 species of 41 genera of American birds, 24 species of which were accompanied by the nests. To Dr. Heerman we must also express our thanks for seven rare species of eggs from Florid

The Conchological department is still in progress of arrangement by Dr. R. E. Griffith, in the horizontal cases occupying the floor of the east basement room and has been much enriched during 1848 from the private cabinets of Dr. Griffith and Dr. Wilson. These latter have not yet been formally presented through the Curators. We are much indebted to Dr. T. S. Savage, whose zeal in science is only excelled by his former labors in the religious office of missionary to Western Africa, for the donation of 226 specimens of shells, comprising 120 species of 60 genera of rare shells from Western Africa. To Mr. Andrew R. Chambers, of Philadelphia, the gratitude of the Society is owing for the gift of two cabinets, containing 1200 specimens of shells, being part of the well-known Hyde collection, formerly deposited in Peale's museum.

The collection of Crustacea has been arranged by Dr. Bridges during the past summer in the north-east basement room of the Academy. During the year we have received nine specimens.

The collection in Herpetology and Ichthyology is at present undergoing arrangement preparatory to its removal to the flying gallery in the east basement room. The number of species of Reptilia is as follows: Batrachia 120; Sauria 150; Ophidia 242; Chelonia? A conjectural estimate of the number of fishes amounts to 450 species. During 1848, the collection received an addition of 12 species of reptilia, and 16 species of fishes.

The collection in Comparative Anatomy is in good condition, gradually increases, and comprises at present, exclusive of Dr. Morton's extensive series of human crania, 307 crania of mammalia, 658 do. of birds, 68 do. of reptilia, 30 do. of fishes, and 39 mounted skeletons. The collection of Dr. Morton continues to be probably the largest in the world, numbering at present 819 human crania, besides 28 casts of crania of various nations, ancient and modern. During 1848 we have received 12 mounted skeletons, from Drs. Wilson, Watson, Meigs, and Hallowell, and Messrs. Germain, Lambert, and Ashmead; 21 crania from Dr. Wilson; and the deposit of 73 crania, principally human, by Dr. Morton.

The collection in Palæontology, so far as arranged, is contained in the two double rows of horizontal cases occupying the floor of the hall, which, when the last report of the Curators was written, had not been finished. It has been greatly enriched during the past year from a variety of sources. We express our thanks for a magnificent, and, to the American palæontologist for study and comparison, an invaluable gift, from the Honourable Court of Directors of the East India Company, consisting of 124 well made and coloured casts of fossils from the Sivalik Hills of India, comprising casts of fragments of 36 species of 25 genera of mammalia; 1 species of bird; 5 species of 4 genera of reptilia; and 1 species of fish. We cannot appreciate too highly the intelligence of this honourable and celebrated body, when a voluntary gift of such an expensive character is made, having no other object in view than the promotion of science. We also feel our indebtedness to Dr. Thomas Horsfield, Curator of the East India Company's museum, for a fine cast of the cranium of Sivatherium giganteum, the original of which is in the British Museum. To the memory of the late Dr. Carpenter, of New Orleans, we owe our grateful recollections, for the donation of one-half of the inferior maxilla and several teeth of the fossil Tapirus Americanus. To Dr. T. B. Wilson, the lasting gratitude of the Academy is owing, for the largest and most valuable donation in natural history probably ever made in America, consisting of the following collections: Mr. Conrad's collection of American fossils, containing about 3000 specimens and 1000 species; (in this collection are the originals of Dr. Morton from the cretaceous formation;) a general collection of British fossils, containing 9402 specimens, comprising 2935 species; (this collection includes the selected specimens from the cabinet of the late Miss Bennett, of England;) a collection of 2155 specimens, comprising 501 species, from the cretaceous formation of France; a collection of German fossils, containing 650 specimens of 500 species; a collection of Italian fossils from the tertiary of Piedmont, containing 2000 specimens of 600 species; the total of which is 17,207 specimens, and 5545 species. Dr. Wilson has also deposited a very perfect specimen of Ichthyosaurus intermedius. To Mr. Joseph

Culbertson, we are indebted for the deposit of the unique specimens of the new genus of fossil mammalia Merycoidodon. The Professors of the Jardin des Plantes have presented to us several of their beautifully made casts of Anoplotherium and Paleotherium. Besides the foregoing we have received 128 specimens from various members and others.

In Entomology, it affords us pleasure to say, that the collection is in an excellent state of preservation, and is in steady progress of arrangement by Dr. Zantzinger, and from the many donations in the past two years already numbers several thousand specimens of Coleoptera and Lepidoptera. The impression which unfortunately exists, that this department of natural science is not sufficiently cared for in this institution, we hope will be henceforward removed. Members and friends of the Academy need not now hesitate before presenting or depositing collections of insects in the institution, as the danger of their destruction from neglect or other causes no longer exists. At present, this like the other departments, is under the constant supervision of two officers, whose duty it is not to permit any portion of the property of the Society which is placed in their charge to suffer from neglect or depredation. In the course of the last year Dr. Wilson presented 200 specimens of American and foreign Lepidoptera to the cabinet. We also acknowledge our indebtedness to Mr. Wm. Hobson, of Kingsessing, for the donation of 500 determined specimens of British Coleoptera; to Mr. Edward Doubleday, of the British Museum, for a very fine collection of about 900 determined and arranged species of British Coleoptera; and to Dr. A. L. Heerman, our fellow member, for numerous specimens of American Lepidoptera, chiefly from Key West, Florida, many of which are rare.

The Cabinet of Mineralogy and Geology during the past summer has been carefully and almost completely arranged by our fellow members Messrs. Vaux, Ashmead and Gambel. It has received some rich additions during the last year, among which should be particularly mentioned a very large and valuable donation from Dr. Wilson, numbering in all 2039 specimens, almost exclusively European, many of them of the rarest and choicest character. Our cabinet of European minerals is now one of the best in the country, although still very deficient in American specimens. The example which has been set by Dr. Wilson we hope may induce others to supply this deficiency.

To M. Bourcier of France, through Dr. Wilson, we have become indebted for the donation of 70 very fine specimens of blue and green carbonate, and red oxide of copper, among which are many and rare modifications of the primitive crystalline form. Nor should we fail to mention the deposit by Mr. Vaux, of an enormous crystal of Beryl, weighing 185 lbs., from Acworth, New Hampshire. Besides these there were presented 40 specimens of minerals by several of the members and others. Among them, are some of the more lately discovered minerals, presented by Mr. Markoe of Washington, and some fine specimens of Elba iron ore from Dr. Carson.

The unrestricted admission of persons to the museum of the Academy upon the afternoons of Tuesdays and Saturdays, having been found to be attended with some injury and even destruction of its furniture, caused the Society, last year, to change one of the days of exhibition, viz. Saturday to Friday, and to issue gratuitous tickets of admission, to be obtained from members upon application. This arrangement has been followed by the most beneficial effects;

persons really desirous of inspecting the collections, take the trouble to procure a ticket, with which they feel responsible for their conduct; the introduction of crowds is also avoided, which, from constant motion, give rise to dust, so detrimental to the more perishable articles in a natural history collection. The janitor, who keeps a register of the names and residences of visitors to the Museum on the Exhibition days, informs me that upwards of three thousand persons have availed themselves of this privilege since the middle of May last, when the new arrangement went into effect. This is an average of about 380 admissions per month, or nearly 5000 per annum.

Joseph Leidy,
Chairman of Curators.

December 26th, 1848.

The Academy then proceeded to an election for Officers for 1849. The following were reported by the tellers as elected :—

PRESIDENT.

William Hembel.

VICE PRESIDENTS.

J. Price Wetherill,
Samuel George Morton, M. D.

CORRESPONDING SECRETARY.

John Cassin.

RECORDING SECRETARY.

William Gambel, M. D.

LIBRARIAN.

William S. Zantzinger, M. D.

TREASURER.

George W. Carpenter.

CURATORS.

Joseph Leidy, M. D.,
William S. Vaux,
Samuel Ashmead,
John Cassin.

AUDITORS.

Robert Pearsall,
William S. Vaux,
Robert Bridges, M. D.

PUBLICATION COMMITTEE.

William S. Vaux,
S. G. Morton, M. D.,
William Gambel, M. D.,
Robert E. Griffith, M. D.,
Samuel Ashmead.

DONATIONS TO MUSEUM

In November and December.

November 7th.

Cranium of Alligator Mississippiensis, one of a Delphinus, three of the Orang of Borneo, and one of a Simia. Deposited by Dr. Morton.

Two living specimens of Phrynosoma cornuta, from New Mexico. From Dr. McMurtrie.

Two specimens ♀ and ♂ of Sciurus cinereus, from Delaware. Presented by Dr. Heerman.

Trichiurus lepturus, from Long Island. From Mrs. Jane E. Spooner, of New York, through Prof. Germain.

A curious variety of the domestic duck (Anas boschus) having the toes unconnected by webs; raised near Mount Laurel, N. J. Presented by Mr. Percival.

One hundred specimens of Reptilia, collected in South Carolina, and presented by Mr. Reid.

November 14th.

Numerous specimens of Salt from Mingo lake, in Texas, about 50 miles from Metamoras, Mexico; with the following memorandum: "The lake is a mile and a half in length, and half a mile in width, and so strongly formed is the body of salt on the surface, that wagons, or loaded mules, can be driven over it, without danger of breaking through. The rapidity of its formation, without any artificial process, or mechanical aid, is most remarkable, as the inhabitants cut it out, in large blocks or cakes, around the margin of the lake, and in a day or two it is replaced by another supply equally thick." Brought from Metamoras by Col. Wm. Davenport, U. S. A., and presented by Mrs. Davenport.

Eleven human Crania—Shawnee, Seminole, and nine Peruvian, and one cast of a Caffre. Deposited by Dr. S. G. Morton.

Cranium of Emys—River Amazon.

Four large specimens of Ostrea Georgiana, from Shell Bluff, Savanah river. From Mr. Reid of S. Carolina.

Ardea rufescens, young, and Picus tridactylis, ♀ and ♀ from Europe. From Dr. Heerman.

Three fragments of maxillæ of fossil Tapirus Americanus? described in Silliman's Journal for 1846. From Texas. Presented by the late Wm. M. Carpenter, M. D., of New Orleans, through Mr. B. M. Norman.

November 21st.

Cast of an Asterias found at Scoharie, N. S. Presented by Mrs. J. E. Spooner, through Prof. L. J. Germain.

Four specimens of Fossils from Catskill, and one specimen of an Orthoceras. Presented by Prof L. J. Germain.

Fourteen hundred and ninety-three specimens of foreign minerals; 21 specimens of American minerals: 135 specimens of Vesuvian minerals; 90 specimens of Auvergne minerals and rocks, and 300 specimens of New Holland minerals and rocks. Presented by Dr. Wilson.

Seventy specimens of blue and green Carbonate of Copper, from Chessy, France, Presented by Mons. Bourcier, of Lyons, through Dr. Wilson.

Specimen of Chromate of Lead from Berisoff, Siberia. Presented by Mr. H. Heuland, of London, through Dr. Wilson.

A large specimen of Stalactite, from Derbyshire, presented by Mr. Adams, of Derbyshire, through Dr. Wilson.

One hundred and sixty-five species (427 specimens) of British Fossils, chiefly from the Chalk, Wealden, Oolite, Carboniferous, Limestone and old Red Sandstone ormations; 150 species (643 additional specimens) from the Bennett collection;

501 species (2155 specimens) from the Cretaceous formation of France. Presented by Dr. Wilson.

A very perfect specimen of Ichthyosaurus intermedius. Deposited by Dr. Wilson.

Mounted specimen of Simia Satyrus. Presented by Mr. T. C. Percival and Dr. Bridges.

December 5th.

Three specimens of Stigmaria in sandstone, and one specimen of Ferns in slate, from Hazleton coal field. From Mr. Samuel Powell.

Nine specimens of Fern, &c., in slate, from Tamaqua mine. Presented by M. D. Eyre.

Sulphuret of Copper from Schuyler mines, N. J. Presented by T. F. Moss.

Pholas californica, from California. From Dr. A. A. Henderson, U. S. N.

Ephialtes Asio, adult female, and young male, from Chester County, Pa. Presented by Dr. S. W. Woodhouse.

Two specimens, male and female, of albino Numida meleagris, raised in Abingdon, Montgomery county, Pa. Presented by Chas. S. Fletcher.

December 12th.

Four specimens of Eocene strata of Vicksburg. Presented by T. A. Conrad.

Collection made by Mr. W. S. Pease, in Mexico, consisting of one skin of Bassaris, one skin of Pseudostoma; reptilia (of the genera Columella, Leptophus, Xenodon, Salamandra, &c.,) and six tortoises; fifty specimens Lepidoptera; and several minerals. Presented by Dr. T. B. Wilson. Also, 131 bird skins, from the same collection. Deposited by the same.

December 19th.

Mounted specimen of Hydromys (Myoptamus) coypus, from Chili. Presented by Dr. T. B. Wilson.

Mounted specimen of Sciurus ferruginiventris, from Monterey, Mexico. Presented by Mr. Wm. Wood.

Amblyopsis pellucidus, from Mammoth cave, Kentucky. Presented by Mrs. C. H. Greff.

DONATIONS TO LIBRARY,

IN NOVEMBER AND DECEMBER, 1848.

November 7th.

Journal of the Indian Archipelago and Eastern Asia. Vol. 2. Nos. 6, 7, 8. From the Editors.

American Journal of Science and Arts. Second Series. No. 18. From the Editors.

Monographie des Coléoptères subpentamères de la famille des Phytophages. Par M. Th. Lacordaire. 2 vols. 8vo. From the Author.

Révision de la famille des Cicindélides, par M. Lacordaire. From the same.

Annales de la Société Royale d' Agriculture, &c., de Lyon. Tome ix. 8vo. From the Society.

Annales de la Société Linnéenne de Lyon. Années, 1845—'46. 8vo. From the same.

Note sur l'emploi du sucre pour préserver les chaudières à vapeur des incrustations salines. Par M. Quinon. From the same.

Annual Report of the Regents of the University of the State of New York on the condition of the Cabinet of Natural History. From the Regents.

Ueber den Bau der Ganoiden, &c., von Joh. Müller. From Dr. Leidy.

Beiträge zur Kenntniss der natürlichen Familien der Fische. Von J. Müller. From the same.

Bericht über die von Hernn Koch in Alabama, gesammelten fossilien Knochenreste seines Hydrarchus. Von J. Müller. From the same.

Fernere Bemerkungen über den bau der Ganoiden. Von J. Müller. From the same.

Beschreibung neuer Asteroiden. Von J. Müller und F. H. Troschel. From the same.

Observationes quædam Entomologicæ de Oxybelo uniglume, atque Miltogramma conica. Auctore C. Th. E. de Siebold. From the same.

Dr. Wilson deposited the following works:

An introduction to the Birds of Australia. By John Gould. 8vo.

Bibliographia Zoologiæ et Geologiæ. By Prof. Louis Agassiz. Edited by H. S. Strickland. Vol. 1. 8vo.

The Correspondence of John Ray. Edited by Edwin Lankester, M. D. 8vo. (Ray Society Publication.)

Phycologia Britannica. By William Henry Harvey, M. D. Part 33. 8vo.

Palæontographica. Beiträge zur Naturgeschichte der Vorwelt. Herausgegeben von Dr. W. Dunker und Herm. Von Meyer. Vol. 1. No. 4. 4to.

Zeitschrift für Malakozoologie. Herausgegeben von Karl Th. Menke, M. D., und Dr. Louis Pfeiffer. Jan., 1848.

Illustrations of the Birds of Jamaica. By P. H. Gosse. Part 6. 8vo.

Conchologia iconica. By Lovell Reeve. Part 66. 4to.

History of British Mollusca and their Shells. By Prof. Ed. Forbes, and S. Hanley, Part 9. 8vo.

Annals and Magazine of Natural History. Vol. 2. 2d series. No. 9.

Monograph of the British Nudibranchiate Mollusca. By Joshua Alder and Albany Hancock. Part 4. 4to.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 18. 4to.

Illustrations of the Zoology of South Africa. By Andrew Smith, M. D. No. 28. 4to.

The Entomological Cabinet, being a Natural History of British Insects. By George Samouelle. 2 vols. 12mo.

The Entomologist's Text Book. By J. O. Westwood. 12mo.

Johannes Godartius on Insects. 4to.

Nomenclature of Coleopterous Insects in the collection of the British Museum. Part 3.

List of Specimens of Lepidopterous Insects in the British Museum. Appendix.

The Birds of Australia. By John Gould. Parts 35 and 36. Folio.

Essays on the Microscope. By George Adams. 4to.; and Atlas 4to.

Monograph of the British Naked-eyed Medusæ. By Edward Forbes. 4to. (Ray Society Publication.)

The Dodo and its kindred. By H. E. Strickland and A. G. Melville, M. D. 4to.

D'Amboinischer Rariteitkamer, &c. Door Geo. E. Rumphius. Folio.

Revue Zoologique. No. 6. 1848.

Comptes Rendus. Tome 28. Nos. 7, 8.

The following were deposited by Dr. R. E. Griffith:

Abulfedæ descriptio Ægypti; edidit J. D. Michælis. 8vo.

Prosperi Alpini de Plantis Ægypti liber. 4to.

Fabi Columnæ Lyncei Phytobasanos cui accesit vita Febi et Lynceoum notitia annotationesque in Phytobasanon Jano Planco Ariminense auctore. 4to.

Kiliani Stobæi Opuscula. 4to.

Compendium Floræ Germaniæ. Scripserunt M. Jos. Bluff et Car. Ant. Fingerhuth. 2 vols. 12mo.

Caroli Clusii Atrebat. Rariorum aliquot Stirpium per Hispanias observatorum historia. 8vo.

Index systematicus Musæi Geversiani. 8vo.

The Philadelphia Medical and Physical Journal. By Benj. S. Barton, M. D. Vol. 3. 8vo.

November 21st.

Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 3. No. 2. From the Association.

Descriptions of some of the species of naked, air-breathing Mollusca, inhabiting the United States. By Amos Binney. Deposited by Dr. Griffith.

Notice of some works, recently published, on the nomenclature of Zoology. By A. A. Gould, M. D. From the same.

Descriptions of twelve new species of Uniones. By Isaac Lea. From the same.

Descriptions of some new Fossil Shells from the Tertiary of Petersburg, Va. By Henry C. Lea. From the same.

Third Annual Report on the Geology of Vermont. By C. B. Adams. From the same.

Description d' un genre nouveau de Coquille vivante, Bivalve, des Mers de Chili. Par M. Des Moulins. From the same.

Beschreibung der in der grossen knochen Höhle-Tennessee (N. A.) gefundenen fossilen Knochen des Megalonyx laqueatus von Dr. Harlan; verdeutscht durch Charles Cramer. From Mr. Cramer.

Materials for a Fauna and Flora of Swansea, and the neighbourhood. By L. W. Dillwyn. 8vo. From the author.

Review of the references to the Hortus Malabaricus. (L. W. Dillwyn.) From the same.

Hortus Collinsonianus; an account of the plants cultivated by the late Peter Collinson. 8vo. (L. W. Dillwyn.) From the same.

Some account of a Lusus of the hybrid Cytisus Adami, at Sketty Hall. By L. W. Dillwyn, 8vo. From the same.

Dr. Wilson deposited the following:

Voyage in Abyssinie; par MM. Ferrett et Galinier. Texte Livs. 5—8. 8vo. Planches, Livs. 5—8, folio.

Verhandelingen over de Naturlijke Geschiedenis der Nederlandsche overzeesche Bezittingen. Land en Volkenkunde. No. 10. Folio.

Over de Zoogdiëren von den Indischen-Archipel, door Salomon Müller. Folio.

Synbolæ Physicæ. (F. G. Hemprich et C. G. Ehrenberg.) Insectæ, Decas 4to. Folio.

Fauna Japonica; Auctore P. F. de Siebold. Sauria et Batrachia, No. 1; Chelonia, No. 1; Ophidia, No. 1; Crustacea, Nos. 1—5; Aves, Nos. 3—6. Folio.

Fauna Marchica. Die Wirbelthiere der Mark Brandenburg, bearbeitet von J. H. Shultz. Nos. 1—4.

Notes et observationes sur la ponte des Oiseaux qui se trouvent à l' ouest de la France. Par J. C. Lapierre. 8vo.

Revue Zoologique. Nos. 7, 8. 1848.

Annals and Magazine of Natural History. Vol. 2. 2d series. No. 10.

The South African Quarterly Journal. 2d Series. Nos. 1, 2, 3.

Ova Avium plurimarum ab O. des Murs.

Tentamen Monographiæ generis Phæton. Par. M. Brandt.

Rapport sur une Monographie de la famille des Alcadées. Par M. Brandt.

Die vollstandigste Naturgeschichte des In-und Auslandes. Von H. G. Ludwig Reichenbach. Nos. 1—39. 8vo.

Ornithologischer beitrag zur Fauna Groenlands von Carl Holböll. 8vo.

Conchologia iconica. By Lovell Reeve. No. 67. 4to.

Illustrations of British Mycology. By Mrs. Hussey. Part 19. 4to.

Illustrations of the Birds of Jamaica. By Philip H. Gosse. No. 7.

Phycologia Britannica. By Wm. H. Harvey, M. D. Part 34.

A history of British Mollusca. By Prof. Forbes and Sylvanus Hanley. Part 10. 8vo.

Notes sur les mammifères et sur l' Ornithologie de l' ile de Madagascar. Par Victor Sganzin. 4to.

Taxidermist's Manual, &c. By Capt. Thomas Brown. 12mo.

Th. Brünnichii Ornithologia Borealis, &c. 12mo.

Contributions towards a Catalogue of Plants indigenous to the neighborhood of Tenby. 8vo.

Contributions to Ornithology, 1848. By Sir Wm. Jardine.

Galerie des Mollusques, ou Catalogue des Mollusques et Coquilles de Museum de Douai. Par MM. Potiez et Michaud. 4 vols. 8vo.

Historia natural y moral de las Indias, por el Padre Joseph de Acosta. 4to.

Animal Chemistry. By Justus Liebig, M. D. Edited by Wm. Gregory, M. D. 2d edition. 8vo.

Familiar letters on Chemistry. By Justus Liebig, M. D. Edited by John Gardner, M. D. 3d edition. 2 vols. 8vo.

Chemistry in its applications to Agriculture and Physiology. By Justus Liebig, M. D. Edited by Lyon Playfair, Ph. D. 3d edition. 8vo.

Taschenbuch der Deutschen Vögelkunde oder kurze Beschreibung aller Vögel Deutschlands von H. de Meyer und Prof. Dr. Wolfe. 2 vols. 8vo.

A practical Treatise on British Song Birds. By Joseph Nash. 8vo.

Ornithologisches Taschenbuch von und für Deutschland oder kurze Beschreibung aller Vögel Deutschlands von J. M. Bechstein. 12mo.

A narrative of a visit to the Mauritius and South Africa. By Jas. Backhouse. 8vo.

A narrative of a visit to the Austrian Colonies. By James Backhouse. 8vo.

Faune Ornithologique de la Sicile, par Alfred Malherbe. 8vo.

Synopsis Mammalium. Auctore J. Baptista Fischer, M. D. 8vo.

Description des Mammifères et d' Oiseaux récemment découverts, &c. Par M. Lesson. 8vo. (Supplement aux œuvres de Buffon.)

Faune de Maine et Loire. Par P. A. Millett. 2 vols. 8vo.

A catalogue of the organic remains of the county of Witts. By Etheldred Benett. 4to.

A systematic catalogue of British Insects, &c. By James F. Stephens. 8vo.

Traité sommaire des Coquilles tant fluviatiles que terrestres qui se trouvent aux environs de Paris. Par M. Geoffroy, 12mo.

The natural history of the rarer Lepidopterous insects of Georgia; collected from the observations of Mr. John Abbott. By James Edward Smith, M. D. 2 vols. Folio.

Histoire générale et iconographie des Lepidoptères et des Chenilles de L'Amerique Septentrionale; par le Dr. Boisduval et M. J. Le Conte. Tome 1er. 8vo.

Traité de Fauconnerie; par MM. H. Schlegel, et J. A. O. Van Wolverhorst. Livs. 1. et 2. Elephant folio.

Ittiolitologia Veronese del Museo Bozziano ora annesso a quello del Conte Giovambattista Gazola e di altri Gabinetti di Fossili Veronesi. Folio.

Jacobi Christiani Schæfferi Elementa Ornithologica. 4to. 2d edition.

Versuch einer Naturgeschichte der Krabben und Krebse, &c. Von Johann F. W. Herbst. 4to., and Atlas folio.

Libellulinæ Europææ, descriptæ ac depictæ a Toussaint de Charpentier. 4to.

An introduction to Lamarck's Conchology. By Edmund A. Crouch. 4to.

Systematische Darstellung der Fortpflanzung der Vögel Europa's mit Abbil. der Eier. Im Vereine mit Lud. Brehm und G. A. W. Thienemann; herausgegeben von F. A. L. Thienemann. 4to.

Traité Anatomique de la Chenille qui ronge le bois de Saule, &c. Par Pierre Lyonet. 4to.)

Jacobi Theodori Klein naturalis dispositio Echinodermatum. Sciagraphia Lithologica curiosa sur Lapidum figuratorum nomenclator, olim a celebri J. J. Scheuchzero, auctus &c. a J. T. Klein. Jacobi T. Klein historia Piscium naturalis, &c. (in 1 vol. 4to.

Vergnügen der Augen und des Gemüths in Vorstellung einer Allgemeinen Sammlung von Muscheln und Schneckden von Georg Wolfang Knorr. 6 vols. in 3. 4to.

Ausführliche Nachricht von neuentdeckten Zooliten unbekanntner vierfüssiger Thiere, &c. Von J. F. Esper. Folio.

Descriptiones et icones Amphibiorum. Auctore Dr. J. Wagler. Folio.

Illustrations of Zoology, &c. By James Wilson. Folio.

Teutsche Ornithologie, oder Naturgeschichte aller Vögel Teutschlands; herausgegeben von Borkhausen, Lichthamer und Berker dem Jüngen. Folio.

Descriptions and anecdotes of the Orang-Outangs now exhibiting at the Egyptian Hall, Piccadilly.

Dell' Uccello Messicano quezalt e dei Trogonodi cui appartienne di Carlo L. Bonaparte.

List of Specimens of British animals in the British Museum. Part 1st. List of specimens of British sponges in the same. Synopsis of the contents of the same.

Description, history, and anecdotes of the Giraffes, now exhibiting in the Surrey Zoological Gardens. By J. E. Warwick. 2d edition. 8vo.

Report of the Council and Auditors of the Zoological Society of London, 1832 to 1848. Report on the farm of do., at Kingston Hill, for 1832. List of the Fellows and Members of the same, 1847. List of the Animals in the gardens in do , 1833 and 1837. Gardens and menageries of the same delineated. Quadrupeds and Birds. 2 vols. 8vo.

The Tower Menagerie. 8vo.

The learned Societies and printing clubs of the United Kingdom. By the Rev. A. Hume, LL. D. 8vo.

The London Catalogue of Books from 1845 to 1846. 8vo.

The Book collector's hand-book. 8vo. 1845.

Catalogue raisonné d' Oiseaux de l' Algerie, par M. Alfred Malherbe.

Catalogue des objects d' histoire naturelle composant le Cabinet de MM. Verraux, pere et fils.

Catalogue de tous les objects dans un cabinet d' histoire naturelle en vente à Lorienne. 4to.

Catalogue du Musée Départmental des Antiquités de Rouen. 12mo.

Catalogue des genera, et des especes les plus remarkable comprenantla collectione de Coquilles de M. Castellin. 8vo.

Catalogue des Crustacèes dans le Boulonnais, par M. Bouchard Chanteraux ; Observations sur le genre Ancyle, par le meme, (in one vol.) Catalogue des Mollusques à l' etat vivant dans le department du Pas-de-Calais, par le meme. 8vo.

Musée des Thermes et de l' hotel de Cluny. Notice. 12mo.

The Naturalist's Library. Introduction to Entomology. Vol. 1 ; Mammalia, Horses, 1 vol. ; Introduction to the Mammalia, 1 vol.

The Library of Entertaining Knowledge. Domestic habits of Birds, 2 vols. : Architecture of do., 2 vols. ; Faculties of do., 2 vols. ; The Menageries, Quadrupeds, 8 vols. ; Insect Architecture, 3 vols.

The Natural History of Selborne. By the Rev. Gilbert White ; with notes by Capt. Brown. 12mo.

Catalogue of the recent Shells in the collection of John Adamson, Esq.

The Dublin University Museum ; June, 1847.

Report of the Meteorological Committee of the South African Association, 1836 and 1837 ; Annual Reports of do., 1830—1833 ; Regulations of do , 1832.

Annual Reports of the Council of the Yorkshire Philosophical Society for 1845 and '46.

Abstract of Proceedings of the Cape of Good Hope Association for exploring Central Africa. 8vo.

Comptes Rendus. Nos. 9, 10, 11. Tome 27.

Isis von Oken. Heft 4. 1848.

December 5th.

Bulletin de la Sociètè Impèriale des Naturalistes de Moscow. Nos. 3, 4, 1847. 1, 2, 1848. From the Society.

Zeitschrift für Malakozoologie ; herausgegeben von Karl Th. Menke. 1844, 1846. Deposited by Dr. Griffith.

Synopsis of the Flora of the Western States. By John L. Riddell. 8vo. From the same.

Manuel d'Entomologie; par M. Boitard. 2 vols. 12mo. From Dr. Leidy.

De Selachiorum et Ganoideorum Encephalo. Auctor Gulielmus Busch. 4to. From the same.

Disquisitiones anatomico-comparativæ de membro piscium pectorali. Auctor Carolus Mettenheimer. 4to. From the same.

Prof. Patterson's address before the Linnean Association of Pennsylvania College. From M. L. Stoever, Esq.

Notes on the Geology of Charleston, S. C. By F. S. Holmes. 3 copies. From the author.

Report on the subject of International Exchanges. By Alexander Vattemare. From J. L. Dix, Esq.

Hermolai Barbari Patritii Venetii in C. Plinii naturalis historiæ libros castigationes. 8vo. 1534. From Dr. Morton.

Asiatic Researches. Vols. 1—5. 4to. From the same.

Asiatic Researches. Vols. 1—5. 4to. From Wm. Hembel.

Dr. Wilson deposited the following:

Journal de la navigation autour du Globe de la Thetis et de l'Esperance, pendant les Annees 1824—'26. Texte. 4to. tomes 9; planches folio, tome 1.

Voyage au Pole Sud et dans l'Oceanie sur les Corvettes L'Astrolabe et La Zelèe pendant les an. 1837—'40. Texte 8vo., tomes 9; planches folio, tomes 6.

Voyage autour du monde sur la frègate la Venus, pendant les an. 1836—39. Texte 8vo. tomes 9, planches folio, tomes 4.

Histoire naturelle des Perroquets, (pour faire suite aux deux vols. de Levaillant.) Par le Dr. A. B. Saint Hilaire. Folio.

Exposition methodique des genres de l'ordre des Polypiers; par J. Lamouroux. 4to.

Histoire naturelle des Iles Canaries; par MM. Webb et Berthelot. Tomes 4to. 8, folio, 1.

Traité élémentaire de Conchyliologie. Par C. P. Deshayes. 8vo.

Histoire naturelle des Oiseaux d'Europe. Par Pierre Boitard. 4to.

Traité élémentaire de Paléontologie. Par F. J. Pictet. 4 vols. 8vo.

Histoire des Coquilles qui vivent aux environs de Paris. Par Brard. 12mo.

The Ornithologist's Text Book. By Neville Wood, Esq. 8vo.

The Naturalist's Library. Natural history of the Birds of Great Britain. By Sir W. Jardine. 4 vols. 8vo.

December 12*th*.

Memoirs of the American Academy of Arts and Sciences. New series. Vol. 3. 4to. From the Academy.

The anatomy of the human body. By John and Charles Bell. 3 vols. 8vo. From Dr. Dawson.

December 19*th*.

The Ethnological Journal. Edited by Luke Burke, Esq. Nos. 1, 2, 3, 4. June, July, August, and September, 1848. From the Editor, through G. R. Gliddon, Esq.

January 9*th*, 1819.

Mr. Ashmead in the Chair.

Letters were read from Dr. B. F. Shumard, dated Louisville, Kentucky, November 20, 1848, and Dr. L. P. Yandell, of same date, severally acknowledging the receipt of their notices of election as Correspondents.

A letter was read from H. Smith, M. D., dated St. James' Place, London, 1st December, 1848, proposing exchanges of Reptilia with the Academy, and transmitting a list of those in his possession. Referred to the Curators.

Prof. H. D. Rogers stated that his views of the formation of mountain ridges by the upheaving of the crust of the earth from subterranean causes, had been amply confirmed in a tour to Europe, which he recently made for that purpose.

Dr. Leidy offered the following observations on the existence of the intermaxillary bone in the embryo of the human subject :

The immortal Goethe, I believe, was the first to point out the existence of the os intermaxillare in the human subject, but it has only been observed in an abnormal condition, or where there has been an arrest of development in connection with some cases of hare-lip ; and the period of life in which it is found as a distinct piece, and its exact limits, have not yet been accurately determined. The universality of the presence of the os intermaxillare in all animals below man, its presence as a distinct piece in an abnormal condition in man always defined by a lateral fissure which characterizes it as the incisive bone, and the uniform existence of a transverse fissure behind the incisive alveoli of the os maxillare superius of the human fœtus at birth, have led many anatomists to suspect its normal and independent existence in the embryotic condition of man at an earlier period than it has been sought for.

As the *negro* in his anatomical characters is not so far removed from the embryological condition as the *white*, it is to be presumed that the intermaxillary bone would remain longer distinct ; and under such an impression I have several times desired medical students, from our Southern States, whose opportunities of investigating the anatomy of the negro are frequent, to make this a subject of inquiry. Such an opinion cannot be considered unworthy of attention, when it is recollected that Tschudi mentions the existence of a true os interparietale, as a constant condition, in certain branches of the aboriginal inhabitants of Peru, the Chinchas, Aymaras and Huancas.

Recently having had an opportunity of examining several human embryos, in one of them I was fortunate enough to detect the intermaxillary bone as a distinct and independent piece. This embryo measured one inch and eleven lines from heel to vertex, and I presumed it to be about nine or ten weeks old. In it ossification had already advanced in the superior maxillary and intermaxillary bones sufficiently to give them a determinate form, and their appearance, when magnified, is represented in the figures 1 and 2, which were taken from the specimens through the aid of the camera lucida.

Fig. 1.

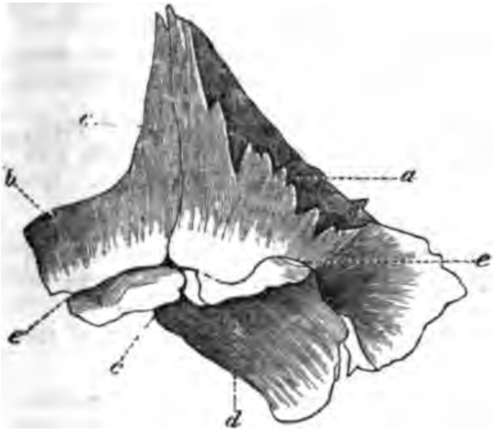


Fig. 2.

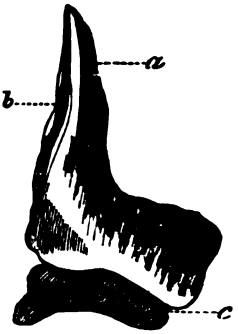


Fig. 1 represents the superior maxillary and intermaxillary bones, much magnified, of a human embryo. The drawing was taken from the right side through the aid of the camera lucida, which reverses its position. *a*. superior maxillary bone; *b*. intermaxillary bone; *c*. line of articulation between the two bones; *d*. palatine process: *e*. alveolar groove.

Fig. 2 represents the antero-inferior surface of the separated intermaxillary bone, much magnified. (From the left side, but reversed by the camera.) *a*. ascending or nasal process; *b*. articulating surface for the superior maxillary bone; *c*. incisor alveoli.

The greatest breadth of the two bones in apposition is one line and two-thirds; the greatest height, being at the ascending or nasal process, in one line. The two pieces present a facial portion, consisting of the ascending or nasal process and part of the body of the bones; an alveolar ridge and groove and a palatine process projecting backward from the superior maxillary bone. They are easily separable at this period, and the articulation passes through the alveolar ridge, at a point corresponding to the separation between the incisor alveoli and the caniae alveolus, and extends transversely inwards behind the incisor alveoli, and vertically upwards, dividing the nasal process into two nearly equal portions. On the posterior surface of the nasal process the articulation is at the bottom of a comparatively deep and wide groove, which however does not appear to be part of the lachrymal canal, as the latter appears afterwards and external to the former groove. The preparations exhibiting these interesting points which prove the existence of the same law, throughout the animal kingdom, governing the formation of the upper maxillary bones, I present for the inspection of the members of the Academy.

In an embryonic skelton in the Wistar Museum, measuring three and one eighth inches in length, and purporting to be about nine weeks old, which, however, I think too young, the maxillo-intermaxillary articulation is still evident at the ascending process, but it does not divide the latter so equally, being more internal and inferior, apparently from a more rapid development of the nasal process of the true maxillary bone. Just above the alveolar ridge they are already anchylosed together.

In another embryo, in the same museum, measuring three and one-fourth inches in length, the two bones have become firmly united, excepting behind the incisor alveoli, but the line of original separation is readily traced out, from a greater degree of thinness and transparency along its course. The nasal process of the true maxillary bone has so much increased beyond the nasal process of the intermaxillary bone, that the latter no more ascends to the summit of the former, but is considerably inferior and internal.

In the fœtal skeleton, measuring five inches in length, all traces of the inter-articulation have disappeared, except behind the incisor alveoli, which latter portion, as is well known, does not usually disappear until some time after birth, and in some instances is found in the adult cranium.

January 23d, 1849.

Mr. Phillips in the Chair.

A letter was read from the Baroness Berzelius, dated Stockholm, September 15, 1848, announcing to the Academy the decease of her late husband, the Baron Berzelius, a Correspondent of this Institution.

January 30th, 1849.

Dr. Bridges in the Chair.

The Auditors reported that they had examined the account of the Treasurer for 1848, and had found it correct.

The Monthly Report of the corresponding Secretary was read and adopted.

The resolution offered by Dr. Leidy, at the last meeting for business, was then taken up, that the following Article of the By-Laws be amended:

"*Chap.* 6*th*, *Art.* 1. There shall be seven standing Committees, viz,—the Auditors, to consist of three members; the Mineralogical and Geological Committee, and the Zoological Committee, to consist of seven members each; the Publication, Library and Botanical Committees, and the Committee on Physics, to consist every one of five members, whose term of service shall be one year. And all these, except the Auditors and Publication Committee, shall be elected at the last meeting of January in each year."

So as to read thus:

"There shall be *fifteen* Standing Committees, viz.: 1. The *Ethnological* Committee; 2, the Committee on Comparative *Anatomy and*

General Zoology; 3, Committee on *Mammalogy;* 4, on *Ornithology;* 5, on *Herpetology and Ichthyology;* 6, on *Conchology;* 7, on *Entomology;* 8, on *Botany;* 9, on *Palæontology;* 10, on *Geology and Mineralogy;* 11, on *Physics;* 12, on the *Library;* 13, on the *Proceedings;* 14, the *Auditors;* and 15, the *Publication Committee;* each to consist of *three* members, whose term of service shall be one year. And all these, except the Auditors and Publication Committee, shall be elected at the last meeting in January of each year."

The amendment was adopted.

The Society then proceeded to an election for the Standing Committees, in accordance with the above amended By-Law. The following members were elected.

COMMITTEES FOR 1849.

1. *Ethnology.*

S. G. Morton, J. S. Phillips,
Charles Pickering.

2. *Comparative Anatomy and Physiology.*

Joseph Leidy, S. G. Morton,
Edward Hallowell.

3. *Mammalogy.*

J. S. Phillips, Joseph Leidy,
S. W. Woodhouse.

4. *Ornithology.*

Edward Harris, John Cassin,
William Gambel.

5. *Herpetology and Ichthyology.*

Edward Hallowell, Robert E. Griffith,
J. K. Townsend.

6. *Conchology.*

Robert E. Griffith, T. A. Conrad,
Henry C. Lea.

7. *Entomology and Crustacea.*

S. S. Haldeman, Robert Bridges,
Wm. S. Zantzinger.

8. *Botany.*

Robert Bridges, Wm. S. Zantzinger,
Gavin Watson.

9. *Palæontology.*

T. A. Conrad, Richard C. Taylor,
Thomas B. Wilson.

10. *Geology and Mineralogy.*

J. Price Wetherill, Samuel Ashmead,
William S. Vaux.

11. *Physics.*

Thomas C. Percival, Samuel Powel,
Robert Kilvington.

12. *Library.*

Robert Pearsall, A. L. Elwyn,
John Lambert.

13. *Committee on Proceedings.*

S. G. Morton, Wm. S. Zantzinger,
Joseph Leidy.

ELECTION OF CORRESPONDENT.

M. Jules Verreaux, of Paris, was elected a Correspondent of the Academy.

February 6th, 1849.

Mr. Phillips in the Chair.

A letter was read from the Regents of the University of the State of New York, dated Albany, 31st January, 1849, acknowledging the receipt of late Numbers of the Proceedings.

A letter addressed to Vice President Morton, from J. D. Dana, Esq., dated New Haven, January 26, 1849, desiring the Academy to unite with other Institutions in petitioning Congress to increase the edition of the Scientific portion of the U. S. Exploring Expedition works. Referred to the following Committee: Mr. Cassin, Dr. Wilson, and Dr. Leidy.

Also a letter from Dr. C. T. Kenworthey, dated Petersburg, Va., February 2, 1849, requesting information in regard to making collections in Zoology, and tendering his services for such purpose during his stay in South America, which country he is about to visit.

A Memoir by Dr. Morton was read, entitled "Additional Observations on a new living species of Hippopotamus," intended for publication in the Journal. Referred to Mr. Phillips, Dr. Hallowell, and Dr. Gambel.

February 13th, 1849.

Dr. Bridges in the Chair.

Letters were read:

From the Secretary of the Royal Bavarian Academy of Sciences, dated Munich, acknowledging the receipt of the Journal and Proceedings, and transmitting the Publications of that Institution.

From Prof. J. Cobb, dated Louisville, Kentucky, February 6th, 1849, acknowledging the receipt of his notice of election as Correspondent.

From Dr. Berendt, dated Dantzig, 1st October, 1848, accompanying a copy of the first Number of his work on Fossil Remains found in Amber, this evening presented, and requesting exchange of North American fossils of the same description for those of Europe.

Mr. Cassin presented a Catalogue of the *Vulturidæ* and *Strigidæ* in the Collection of the Academy, intended for publication in the Proceedings. Referred to a Committee, consisting of Drs. Wilson, Gambel and Townsend.

Professor Agassiz made some observations on the remarkable resemblance of the existing North American Fauna and Flora to that of the Tertiary period of the Old World.

February 20*th*, 1849.

Dr. B. H. COATES in the Chair.

Mr. Cassin read a paper entitled "Descriptions of new species of the genera *Nyctale* and *Sycobius*, specimens of which are in the Collection of the Acad. Nat. Sci. of Philadelphia." Referred to a Committee, consisting of Dr. Wilson, Dr. Gambel, and Dr. Bridges.

Mr. Conrad read a paper entitled "Descriptions of new fresh-water and marine Shells," which was referred to Mr. Phillips, Dr. Griffith, and Dr. Gambel.

Mr. Cassin read some "Notes of an examination of the families Vulturidæ and Strigidæ in the Collection of the Acad. Nat. Sci. of Philadelphia." Referred to the Committee on the previous paper of this evening.

Dr. Hallowell presented a communication entitled "Notes of the post-mortem appearances of a *Cynocephalus?* which died in the Menagerie at Philadelphia." Referred to Drs. Leidy, Keller and Gambel.

February 27*th*, 1849.

Dr. BRIDGES in the Chair.

The Committee on Mr. Cassin's "Catalogue of the Vulturidæ and Strigidæ in the Collection of the Academy of Natural Sciences of Philadelphia," reported in favor of publication.

[This paper will be found at the end of the present number, and is the commencement of a series of similar catalogues of the families in the Ornithological collection of the Academy, which it is the design of the Committee on that department to prepare for publication as soon as possible.]

The Committee on the following paper by Dr. Hallowell, reported in favor of publication.

Notes of the post mortem appearances of a Cynocephalus? which died in the Menagerie at Philadelphia.

By Edward Hallowell, M. D.

Head.—Brain not examined.

Thorax.—There are three lobes to the right lung and three to the left. They present a reddish brown color, mottled with grey, and are crepitant except at the base of the lower lobe of the right, which is firm and resisting to the touch. The surface of both lungs is studded with tubercles, deposited beneath the pleural covering. But few are observed in the lobes of the left, or the upper lobes of the right, but they are thickly agglomerated in the *lowest* lobe of the latter, which is filled with them; they are of a light yellow color, from one line and less to nearly a line in diameter, firm to the touch, and imbedded in a hepatised tissue. The mucous membrane of the trachea and bronchi, traced to the smallest ramifications of the latter, does not present any remarkable degree of redness, being rather pale than otherwise. The bronchial glands are enlarged and tuberculous; the largest is to the right of the trachea, and measures six lines in its greatest extent; on cutting into it, a quality of white cheesy matter makes its escape. Mucous membrane of the œsophagus pale. The heart is small, measuring one inch four lines in length, by one inch (Fr.) in breadth. The pericardium contains about a teaspoonful of citron-colored serosity. The auricles are moderately distended with dark colored blood; a solitary tubercle about the size of a pin's head is observed at the entrance of the vena cava into the right auricle.

Abdomen.—The liver has four distinct lobes and a smaller lobule; it is of a light brown color above, dark green beneath, except in the interspace between the lobes; it presents numerous tuberculous deposits upon its upper and under surface, of a larger size than are usually met with in the liver—the largest upon the under surface measuring five lines in diameter: on cutting into several of them they are found to be filled with tuberculous matter, of a yellowish colour tinged with green. The *spleen* is very greatly enlarged, measuring three inches three lines in length, by one and three-quarters in breadth; it is of a pale reddish color mottled with white, having its surface throughout studded with tubercles; the central portion, on cutting into it, presents the dark-colored appearance usually observed in the spleen, and four or five nodules of tuberculous matter: upon the periphery of the organ the deposit appears to exist in the form of infiltration, extending four lines within its substance at its posterior extremity. The *stomach* does not differ materially in shape from the human, and when laid open, measures four inches (Fr.) from one extremity to the other; there is a well marked pylorus; the œsophagus enters the stomach about midway between the pylorus and the opposite extremity; its muscular fibres are very apparent: it contains a quantity of greenish looking fluid, having a disagreeable odour: the mucous membrane is pale throughout, and does not appear softened, presenting no trace whatever of inflamation; no tubercles are observed upon its surface. The *small intestine* is five feet six and a half inches (Fr.) in extent; it has no valvulæ conniventes, neither does it present any glands of Peyer, nor are any solitary glands observed; the intestine, slit up its entire length, is perfectly pale, both upon its external and inner surface, and no softening of the mucous membrane is noticed; it contains a quantity of greenish fluid; no yellowish matter is observed at its upper extremity; it contains no tubercles, and there are no ulcerations. The *large intestine* is two feet two and a half inches in extent; there is a distinct cœcum, but no appendicula vermiformis; it contains a quantity of greenish looking fluid, similar to that in the small intestine; the mucous membrane throughout is quite pale, and appears to be healthy; held up to the light the mucous follicles are very distinct, but are not very abundant, and are more irregular in their outline than those of the human subject; they are surrounded by a dark-colored border, and several dark points are observed within the circumference of the greater number, (in some of them there are as many as six) *Mesenteric glands* more or less tuberculous, and yet the animal does not appear greatly emaciated; the disease appears to be more fully developed in these glands than in any of the other organs; one of them is much enlarged, measuring fourteen lines by thirteen in size; adherent to it is another thirteen lines by ten; these glands are filled with a white homogenous matter, of the consistence of thick cream; no marks of inflammation are found to exist in any part of the body, except in the lowest lobe of the right lung, where the tubercles are thickly agglomerated, the tissue of the organ being firm and resisting to the touch. Both *kidneys* are tuberculous. They are sixteen lines in length by ten in breadth; upon the convex margin of the left, near its anterior extremity, is a deposit three lines in diameter, resisting to the touch, and elevated considerably above its surface; it is composed of numerous small white bodies; other tuberculous deposits, of various sizes, from that of a grain of sand to a line or more in diameter, are observed upon the surface, for which portion of the kidney they appear to have a predilection. *Bladder* healthy.

The Committee on Mr. Conrad's Description of new Shells reported in favor of publication.

Descriptions of new fresh water and marine Shells.

By T. A. CONRAD.

The following new fresh water shells from Georgia were kindly loaned me for description by J. Hamilton Couper, Esq.

UNIO.

U. securiformis. Suborbicular, thick, compressed; valves slightly convex; umbo flattened, marked with obtuse, narrow, divaricated plaits; plaits on the lower half of the valves obscure and interrupted; umbonial slope rounded; posterior slope with strong oblique plaits towards the apex; backs eroded; epidermis black; within white; cardinal teeth large, direct, profoundly sulcated. 1½ : 1¼.

Inhabits Flint River, Georgia.

U. stagnalis. Widely elliptical, ventricose, rather thin: towards the posterior extremity very thin and fragile; anteriorly regularly rounded; posteriorly somewhat pointed, with an acutely rounded extremity; basal margin regularly curved; summits prominent, eroded; posterior margin very oblique and nearly straight; epidermis ochraceous and olivaceous; rays green, not very distinct on the middle and anterior side, but more so posteriorly, some rather broad, others linear; posterior slope dark colored, rayed; within white and highly iridescent posteriorly; cardinal teeth much compressed and oblique, double in each valve; lateral teeth very slightly curved, finely granulated. 3½.

Inhabits mill ponds; Ogeechee River, Georgia.

U. Ogeecheensis. Elliptical, thin, inflated; posterior side somewhat pointed, extremity subangular; valves slightly contracted from beak to base; summits rather prominent, decorticated, slightly undulated; epidermis ochraceous with interrupted green rays, some of them broad; within white, highly irridescent posteriorly; cardinal teeth oblique, compressed; lateral teeth rectilinear. 3.

Inhabits Ogeechee River, Georgia.

Allied to the preceding, but has a lighter colored epidermis with more distinct rays, is proportionally longer; the cardinal tooth in the left valve is longer and less lobed, and the lateral teeth are straight, without granules, and less oblique than in the preceding species, which is a larger shell.

U. ovatus. Widely elliptical, ventricose, gaping at both ends; posterior gape wide; anterior extremity rather acutely rounded; posterior margin sinuous, extremity subangular; basal margin forming a nearly regular curve: summits prominent; umbo and beak eroded; epidermis ochraceous, polished; cardinal teeth compressed, oblique; lateral teeth straight; within white, much stained with waxen yellow. 3¼.

Inhabits Flint River, Georgia.

This shell has the polished epidermis of U. cariosus, but is without a ray. It is longer in proportion than that species with very different cardinal teeth, which are much nearer parallel with the margin above: the shell also gapes far wider in the only specimen I have seen.

U. rosaceus. Widely elliptical, ventricose above; posterior margin obliquely truncated, slightly sinuous; extremity subangular or acutely rounded; epidermis ochraceous and dark brown; rays indistinct, frequently broad, but composed of fasciculis of lines; surface with fine radiating wrinkles; within deep rose-purple: cardinal teeth prominent, oblique, compressed, trifid or three teeth in the left valve. 3½.

Inhabits Savannah River.

Allied to U. ochraceus, *Say*.

U. contrarius. Elliptical, moderately thick: valves somewhat flattened or plano-convex; umbo and beak not prominent, much eroded; umbonial slope acutely rounded; posterior margin straight above, truncated, direct; epidermis deep ochraceous, with linear radiating wrinkles, and obscurely rayed about the umbo; within pale flesh-color stained with waxen yellow; cardinal teeth direct thick, sulcated, not very prominent; lateral teeth reversed, or the double tooth in the right valve. 3 1-5.

Inhabits the Ogeechee River.

U. nucleopsis. Obtusely subovate, slightly oblique, thick, not ventricose; umbonial slope rounded; posterior slope with a few obscure plaits; posterior margin subtruncated; basal margin slightly tumid near the middle; epidermis ochraceous, with a series of green spots along the umbonial slope; posterior slope obsoletely striated; within bluish white; cardinal teeth thick, direct, single in the right valve. 1¼.

Inhabits Etowah River.

U. limatulus. Subelliptical, convex; posterior side somewhat pointed; umbonial slope angular; anterior slope subcarinated in the middle: posterior margin obliquely truncated: extremity truncated, direct; basal margin regularly rounded; beaks not prominent, eroded; epidermis highly polished, dark brown and ochraceous, obscurely rayed; within flesh color or pale salmon; cardinal teeth oblique, compressed double in each valve; lateral teeth long, slightly curved. 2.

Inhabits Savannah River.

U. *plectrophorus.* Trapezoidal, thick; valves flattened on the sides, slightly contracted, marked with irregular arched, obtuse, interrupted folds, extending from the beaks nearly to the base; umbonial slope angular; posterior slope plicated; beaks not prominent; profoundly eroded; ligament margin elevated; posterior extremity truncated obliquely inwards; basal margin contracted; epidermis thick, sulcated; lateral teeth slightly arched.

Inhabits Flint River, Georgia.

Allied to *U. Sloatianus* and *trapezoides*, Lea.

MARGARITANA, *Schum.*

M. Etowaensis. Oblong-ovate, thin and fragile, widely contracted from beak to base; umbonial slope ventricose, with a plano-convex or flattened surface; ligament margin rather elevated; posterior submargin slightly concave: umbonial slope angular posteriorly; beaks eroded; posterior extremity angular; margin rounded towards the base; basal margin subrectilinear; within bluish and purplish, iridescent; cardinal tooth in the right valve rather long, oblique, compressed, curved, prominent; in the opposite valve the tooth is widely bifid, the posterior lobe pyramidal.

Inhabits Etowah River.

Allied to M. Raveneliana, Lea.

MELANIA.

M. cælatura. Ovate-oblong, turreted; volutions 6, with longitudinal ribs and unequal prominent revolving lines, subnodulous where they cross the ribs; the ribs on the body whorl do not reach the middle; the color ochraceous and brown; aperture narrow, elliptical; labium with interior brown bands: superior part of columella somewhat callous.

Inhabits Savannah River.

Melania perangulata, Subulate; volutions 9 or 10, with an acutely carinated angle on all except the body whorl, which is subcarinated; on each whorl of the spire is a revolving granulated line above the carina; color olive brown.

Inhabits Savannah River.

Melania nebulosa. Elongate conoidal; volutions 6 or 7, with revolving raised lines; whorls of the spire carinated below the middle, above which they are longitudinally ribbed, and have 2 or 3 revolving granulated lines; granules compressed; aperture widely elliptical; color ochraceous, with brownish-black stains.

Inhabits Savannah River.

Melania percarinata. Elongate conoidal; volutions of the spire with a carinated line below the middle, and a revolving granulated line above; body whorl with a granulated revolving line near the suture, and 3 carinated lines, the superior one largest, the lower one fine; color dark olive brown.

Inhabits Savannah River.

Melania symmetrica. Subulate; whorls 9, slightly convex, with longitudinal slightly curved, narrow ribs, interrupted near the suture by a revolving granulated line; ribs on the body whorl not extending as far as the middle; margin of labrum profoundly rounded; color ochraceous and black.

Inhabits Savannah River.

Near the apex, two or three volutions have a fine granulated carinated line.

The following new and interesting Shells are from the coasts of Lower California and Peru, and were presented to the Academy by Dr. Thomas B. Wilson.

SOLECARDIA, *Con.*

Shell bivalve, equivalve; hinge with 2 diverging cardinal teeth, and a linear oblique cartilage pit between; cardinal plate profoundly grooved on each side of the teeth; muscular impressions 2, small, rounded, remote from the margins, particularly from the base; pallial impressions entire.

S. eburnea. Oblong oval, equilateral, ventricose, thin; extremities nearly equally rounded; basal margin arched; valves white, shining, minutely shagreened, towards the base minutely rugose, with fine impressed radiating lines; concentric lines towards the base finely waved, indenting the margin. 1 2-10: 8-10.

In this singular bivalve the pallial impression shows no junction with the adductor impressions, but joins the extremities of the cardinal plate. The muscular impressions are as distinct on the exterior as on the interior.

PETRICOLA.

P. sinuosa. Subtriangular, inflated anteriorly; profoundly sinuous posteriorly; ribs radiating, prominent, acute, except towards the anterior margin, where they are replaced by closely-arranged lines; basal margin profoundly sinuous; within brown, cavity of umbo white; cardinal teeth prominent, 2 in one valve, and one broad one in the other. 8-10: 6-10.

Family Anatenidæ.

CYATHODONTA, *Con.*

An inequivalved bivalve; hinge with a broad, not very projecting, cartilage fosset, which is carinated near the margin; muscular impressions rounded, indistinct; pallial impression with a large rounded sinus.

C. undulata. Subovate, inequilateral, very thin and fragile, with obliquely concentric undulations, profound on the anterior side, and suddenly becoming obsolete towards the posterior extremity, which is truncated and direct; posterior slope of the deeper valve obscurely tricarinated; cartilage pit robust; valves with minute, very closely arranged, granulated radiating lines. 1 2-10 : 1 nearly.

Family Pholadida.

PHOLADOPSIS, *Con.*

Inequivalved; right valve produced posteriorly, left valve overlapping the opposite; cartilage situated on a projecting callus.

P. pectinata. Ovate, very thin and fragile, profoundly gaping posteriorly; profoundly ventricose anteriorly; valves with elevated waved laminæ terminating near a profound sinus, which extends from beak to base; right valve undulated near the posterior end, reflected, margin pectinated; both valves have concentric lines.

PARAPHOLAS, *Con.*

P. bisulcata. Ovate-oblong; anterior accessory valve or deposit strong, shining gibbous on the margin of aperture, and having obscure decussated striæ, the transverse ones a little raised; anterior side of the larger valves with numerous prominent crenulated radii; a slightly oblique sulcus extends from beak to base, and a slightly impressed line runs from the beak to the posterior end of the closed portion of the base; between the two impressed transverse lines the valves have closely-arranged, rugose, longitudinal laminæ, and posterior to these the laminæ are remote and elevated. 2½.

PENITELLA.

P. Wilsonii. Ovate-oblong, very thin, profoundly ventricose; valves with a furrow from back to base; the papyraceous anterior valves very wide; anterior valves with numerous oblique waved laminæ, and radiating acute ribs; ligament margin sinuous; posterior side with concentric distant undulations; two small accessory valves behind the beak, which are reflected posteriorly; membranaceous appendage with a sinuous or concave margin where it joins the shell, and a deeper annular groove anterior to the middle. 2½.

TRITON.

T. perforatus. Subpyriform; volutions 5 or 6; ribs revolving, flattened, slightly prominent, wide and narrow alternately, with narrow interstices and an occasional revolving line; angle of body whorl tuberculated; spire scalariform, the angle of each whorl with a tuberculated rib or carina; color cinereus; epidermis brown, rough, hairy, longitudinally ribbed; aperture wide; margin of labrum sinuous above, profoundly ribbed; ribs about half an inch long, on an ochraceous submargin; columella with white folds, and narrow, dark brown interstices; beak bent, umbilicated. 3 8-10 : 2½.

OLIVA.

O. propatula. Ovate-oblong, slightly gibbous towards the base; color pale ochraceous, marked with a few longitudinal zigzag brown lines, and with darker transverse hair-like lines, and a few spots; columella patulous, deeply sulcated inferiorly; deposit at the base carinated in the middle. 2½ : 1 1-10.

The Committee on Mr. Cassin's Descriptions of new species of Nyctale and Sycobius, reported in favor of publication.

Descriptions of New Species of the genera Nyctale, Brehm., and Sycobius, Vieill.; specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia.

By John Cassin.

Genus Nyctale, *Brehm.* Handb. Nat. Vog. Deuts. p. 111.

Nyctale Harrisii, nobis.

Front, face, nuchal collar, and under surface of the body yellowish white, or buff color.

Spot between the eye and the bill, and a broad occipital band, black,—the latter covering the greater part of the hind head.

Feathers covering the ear, black.

Throat with a few black feathers, and many of the feathers of the ruff on the front neck conspicuously tipped with black.

Upper surface of the back and wings deep reddish-brown; wing coverts with conspicuous round spots of white; all the quill feathers also irregularly marked and spotted with white on the edges of both webs; scapulars largely edged with white and buff.

Upper tail coverts brown, spotted with white. Tail black, with about three pairs of rounded white spots on every feather. Tarsi thickly feathered to the toes, and with the whole under surface of the body buff color.

Total length of skin, from tip of bill to end of tail, about 7½ in.; wing, 5¾; tail, 2¾ inches.

Hab. South America?

The specimen now described was obtained from Mr. J. G. Bell, Taxidermist, of New York, who has no accurate recollection of its locality, but is of the opinion that it came from South America.

I have named this singular and beautiful little species in honor of Mr. Edward Harris, of Moorestown, N. J., Chairman of the Ornithological Committee of this Academy, and a distinguished naturalist.

Genus Sycobius, *Vieillot.*

Scobius scutatus, nobis.

♂ Upper part of the head and neck, broad pectoral band and under tail coverts bright crimson; the crimson of the breast uniting on the sides of the neck with that of the head.

Throat and ears black,—which color forms a large gular patch extending to, but scarcely including the eyes.

All other parts of the body black.

♀ Broad pectoral band and under tail coverts crimson; all other parts, including the head, black.'

Total length of skin from tip of bill to end of tail, about 5¼ inches; wing, 3¼; tail, 2½ inches.

Hab. Western Africa.

Two pairs of the species now described were brought to this country by Robt. MacDowell, M. D., Surgeon attached to the colonial government of Sierra Leone, who collected them in Western Africa.

It bears a greater resemblance to the Sycobius rubricollis, (Swainson,) Vieill. Ois. chant. pl. 43, than to any other species which I have found described; but from this and others it may readily be distinguished by its under tail coverts being crimson, and also by its broad pectoral band of the same color.

—

The Committee on Mr. Cassin's "Notes on the Vulturidæ and Strigidæ in the Collection of the Academy," reported in favor of publication.

Notes of an Examination of the family Vulturidæ, in the collection of the Academy of Natural Sciences of Philadelphia.

By John Cassin.

1. *Gyps fulvus*, (Gm.)

Under this name, either Ornithologists have confounded several distinct species, or the species itself assumes an unusual variety of characters. There are now exhibited in the collection of the Academy, sixteen specimens of Vultures, which have been described as at least four species; but as they all bear more or less intimate relationship to the Gyps fulvus, (Gm.) of Europe, their claims as distinct species have been but partially recognized, and a question seems to be whether the birds so described, which I may observe, are, for the greater part, from widely different localities, really present characters sufficient to entitle them to specific distinction, or only such as may be attributed to age or season, or to what naturalists have rather vaguely called variety.

I have long held as a principle, that however small a peculiar character may be, if it is regularly and constantly reproduced in the generation of an animal, or in other words, is uniformly and with certainty transmitted from parent to offspring, that animal is entitled to be regarded as a distinct species, and is different from any other.

The transmission of character can be, of course, most satisfactorily ascertained in the natural habitation of the species, but if a series sufficiently extensive, or any considerable number of specimens, invariably present a peculiar character, the student in a museum may assume, quite justly, that he has sufficient evidence.

In the present case the number of specimens is not sufficiently large to warrant a conclusion, but they appear to present uniformly different characters enough to induce the opinion that the following are specifically distinct: *Gyps fulvus*, (Gm.;) *Gyps Kolbii*, (Daub.;) *Gyps indicus*, (Temm.;) *Gyps tenuirostris*, Hodgson.

2. *Gyps indicus*, (Temm.)

This species is in an extraordinary state of confusion.

Mr. Temminck describes and figures a Vulture in Pl. Col. i., liv. 5, pl. 26, supposed by him to be the "Vultur indicus, Lath.," which name and authority, he gives at the head of his article, and in the text of same vol., liv. 72, art. V. imperialis, alludes to it as the same as Vultur leuconotus, Gray. Ill. Ind. Zool.

pl. 15, which differs so entirely from M. Temminck's plate, that the latter must have considered it as either the young or adult of his species. But it appears that V. leuconotus, Gray, is the adult of Vultur bengalensis, Gm., and it also appears that M. Temminck's plate does not represent the last named species in any known state of plumage, consequently his text and plate refer to different birds.

Col Sykes in "Catalogue of Birds, observed in Dunkun," Proc. Zoo. Soc., London, 1832, p. 77, gives "Vultur indicus, Lath., Temm., Pl. Col. 26," as an abundant species, and the remark is inserted that "Col. Sykes' specimens are no doubt referable to M. Temminck's species."

Mr. H. E. Strickland, in Ann. and Mag. Nat. Hist., xiii., p. 34, presumes Vultur leuconotus, Gray, to be the same as Vultur indicus, Temm.; and in same volume, p. 205, mentions V. indicus, Scop. and Lath., and V. indicus, Temm., as though he meant two species.

Mr. E. Blyth, in "Remarks upon the birds presented by Mr. Hodgson, to the British Museum," same journal, xx., pp. 315, 387, insists that "Vultur indicus, Scop. and Lath., in Gyps tenuirostris, Hodgson," so that whenever he speaks of Vultur indicus, (as in same journal, xiii., p. 115,) he means, of course, Gyps tenuirostris, Hodgson.

M. C. J. Sundeval, in same journal, xviii., p. 459, speaks of V. indicus, Temm., as a species similar to V. fulvus, but different from V. bengalensis, and evidently is of opinion that V. indicus is distinct from either. He states, too, that he saw none near Calcutta, which were yellowish-brown, and therefore "presumes that the so colored Vultur indicus, never, or rarely, occurs near Calcutta."

Mr. J. E. Gray, in Catalogne Rap. Birds in Brit. Mus., insert "Vultur ndicus, Temm.," as synonyme for the Gyps fulvus, Gm.

All the four specimens labelled "Vultur indicus," in the Rivoli collection, are also labelled as coming from South Africa. These specimens comprise two young, one male probably adult, and one female, also probably adult. The young certainly bear a much greater resemblance to M. Temminck's plate than do any others in the collection; hence I am inclined to the belief, that Vultur indicus, Temm., Pl. Col. 26, is an African bird, and, as stated in the preceding article a distinct species.

What "Vultur indicus, Scop. and Lath." may be, is more than I can tell from the descriptions, but at any rate, I see no reason to cavil at Mr. Blyth's conclusion; the descriptions of both Scopoli and Latham, and especially the figure in Sonnerat's Voy. India, ii., pl. 105, do appear to me, however, quite unsatisfactory.

3. *Sarcoramphus gryphus*, (Linn.)

Naturalists and travellers seem to have decided that the male of this species is the larger. If this is true, it appears to be the only instance in which such is the case in the Rapacious birds, and is a singular exception to the general rule that the female is the larger in this order.

4. *Cathartes aura*, (Linn.)

British and American Naturalists consider this name as applicable to the bird figured by Wilson, Am. Orn. pl. 75, fig. 1, and Audubon, B. of Am. pl. 151; but some continental European authors have applied it to the Carthartes jota, Molina which is understood to be the same as Vultur atratus, Bartram Travels, p. 289, figured by Wilson, Am. Orn. pl. 75, fig. 2. and Audubon, B. of Am. pl. 106.

The former are correct, and the latter appear to have been led into error by the statement of Buffon who figures the C. jota in Pl. Enl. 187, and states in the text Pl. Enl. i, p. 136, that it is called "ouroua ou aura." Daudin, Traité d'Orn. ii. p. 19, under C. aura, cites Buffon's plate. Spix. Av. Bras. i. p. 2, describes the C. jota under the name of Cathartes aura, and also cites Buff. Pl. Enl. 187. Vieillot, in Ois. de l'Am. Sept. pl. 2, figures C. jota, and in his text cites Vultur aura, Linn. as a synonyme, though he also figures the true C. aura, Linn., pl. 2, bis. and gives its correct name.

M. D'Orbigny, in Voy. dans l'Am. Merid. Ois. p. 31, although he describes and figures the C. aura by its proper name, yet quotes C. jota, "Ch. Bonap.," and Vultur atratus, Wilson, Orn. Am. ix. pl. 75, fig. 1, as synonymes, which is an error, as he would readily have ascertained by referring to Wilson's figure as quoted by himself.

There is moreover a further difficulty. It seems desirable to know whether Linnæus described from North or South American specimens, as the Prince De Wied has described the North American bird as a species distinct from the C. aura, Linn., under the name of Cathartes septentrionalis, De Weid;—the original description I have not seen, but it is copied at length in Tschudi's Fauna Peruana, Orn. p. 74.

It is probably now quite impossible to ascertain from what part of America the specimens described by Linnæus were actually brought, but fortunately the difficulty last stated, as well as all the former, is easily settled without such knowledge.

As synonymous with Vultur aura, Linnæus himself in Syst. Nat. 12th edition, i., p. 122, cites Catesby, Carolina, 1. pl. 6, and Sloane's Jamaica ii., pl. 254, both of which are clearly the same bird as that figured by Wilson and Audubon, under the same name, so it would appear sufficiently evident that whatever other species may inhabit America, the common bird of North America is the true C. aura, Linn. I beg leave to add, that that excellent observer and accurate naturalist Mr. George Ord, expressly states, in Am. Orn. ix., p. 99, "The Vultur which Sir Hans Sloane has figured and described is undoubtedly the Vultur aura," that is to say, it is the same as the species figured by Wilson.

The figure of the head in D'Orbigny's Voyage dans l'Am. Merid., pl. 1, fig. 3, appears to me to be that of the true C. aura, Linn., or the same as the North American species, and the same as that described by Spix Av. Bras.. 1, p. 2, under the name of Cathartes ruficollis, Spix, which is, therefore, a synonyme.

5. *Cathartes Burrovianus*, Cassin.

This is a species described by me from a specimen brought from Mexico, and is the smallest of all known Vultures. The Rivoli collection contains one specimen of this bird, which is more adult than the specimen described.

This may be the species which is alluded to by Pennant, in Arctic Zoology, (as quoted by Mr. Ord,) who says that the Turkey Vulture of the West Indies is "far inferior in size to that of North America."

The plumage of the specimen in the Rivoli collection, is clear black, like that of the specimen previously in the collection of the Academy; the secondaries having slightly paler margins, but with no mixture or edging of brownish which prevails in the plumage of all the specimens of C. aura which I have seen. The feathers on the neck, instead of forming a perfectly circular, or ring-like ruff, as in C. aura, in the present species, extend decidedly upwards on the back of the neck; in the specimen here alluded to, almost to the occiput. The following are the measurements of the two species.

	C. aura, (Linn.)	C. Burrovianus, Cassin.
Total length from tip of bill to end of tail (mounted specimens,)	30 inches.	22 inches.
Wing from flexure to tip of longest primary,	23 "	18 "
Tail,	12 "	8½ "
Tarsus,	2¾ "	2½ "
Bill from gap direct to tip,	2½ "	2 "

6. *Cathartes jota*, (Molina.)

I am not without suspicion that the bird described by the Abbe Molina, in Essay on the Natural History of Chili, p. 245, (M. Gruvel's French translation,) is not the same as the Vultur atratus, Bartram, Travels, p. 289.

There are in the collection of the Academy three specimens which are clearly the latter, being the same birds given by Wilson and Audubon; one of these was presented by Mr. Audubon, another was obtained in Florida, and presented by Dr. McEuen; the third belongs to the Rivoli collection, but there is a fourth specimen which is materially different. It belongs to the Rivoli collection and is without label.

This last specimen is not only much smaller than the former, but it has the head quite smooth and not carunculated or rugose, as in the common species of North America. In fact its head resembles that of the C. aura, (Linn.,) more than it does the C. atratus, (Bart.,) and is covered by such a comparatively clear and smooth skin that I can readily suppose it to be colored in the living bird, which would be strictly as described by the Abbe Molina, or at least as his French translator says for him, p. 246, "sa tête est sans plumes, converte d'une peau ridée *de couleur rousse*." Mr. Audubon, Orn. Biog. ii., p. 52, describes his bird as "the head having a black, rugose, carunculated skin, sparsely covered with short hairs and downy behind," which is precisely the case in the three specimens alluded to, but I quote Mr. Audubon's description, because he, as well as the Abbe Molina, probably described from recent specimens.

The one specimen here alluded to is as above stated smaller than either of the others, as will appear by the following measurements,

	Mr. Audubon's specimen.	Smaller specimen.
Total length from tip of bill to end of tail,	25 inches	19½
Wing from the flexure to tip of longest primary,	17 "	15½
Tail,	7½ "	7

7. The family Vulturidæ has been arranged apparently in a manner only provisional according to the Natural System, by Mr. Swainson, Lerdner's Cab. Cy. Birds, i. p. 289, and ii. p. 205.

Notwithstanding such high authority as Mr. Swainson, I am disposed to think the Gypinæ (of my catalogue) the subtypical group, and the Sarcoramphinæ appear to me to present characters sufficient to warrant the conclusion that they are the true Rasorial Vultures.

In confirmation of my opinion of the Sarcoramphinæ, I may refer to the well known fact that the species of Cathartes are amongst the most confidant and familiar of birds, and that such disposition seems also to extend to Sarcoramphus. In a note to "Remarks on the Birds observed in Upper California," by Dr. William Gambel, in Jour. Acad. Nat. Sci., Philada. new series, (Quarto) Vol. i. p. 25, he mentions having seen at Valparaiso a specimen of the Condor so completely domesticated that it was allowed to roam the city at large, and so entirely docile that it offered no resistance to being handled, and would even permit the caresses of children, or their attempting to get upon its back. "In fact," he continues, "I think I have never met with any bird which exhibited more tameness or greater confidence in man than this large Condor.

After first premising that in all matters relating to Natural History I am a strict circularian of the school of MacLeay, Vigors and Swainson, I beg leave to present the following as my views of the classification of the subfamilies of Vulturidæ.

1. Typical, Vulturinæ.
2. Subtypical, Gypinæ.
3. Natatorial, Gypaëtinæ.
4. Grallatorial, Neophrinæ.
5. Rasorial, Sarcoramphinæ.

8. The collection of this Academy contains, probably, all the known Vultures. The only exceptions being, first, the species labelled "Gyps tenuirostris, Hodg.?" it is possible may not be that bird; and second, a bird figured in Brown's Illustrations of Zoology, pl. 1, London, 1776, which is Falco ambustus, Gm., and Vultur ambustus (Gm.) of Latham, and said to inhabit the Falkland Islands, is not in the collection. I suspect, however, that the latter is not truly a Vulture, though it is difficult to determine from the plate above cited.

There are exhibited in the collection of the Academy sixty-eight specimens of Vultures, which represent nineteen species, including as species the Gyps indicus, (Temm.) G. Kolbii, (Daud.) and G. tenuirostris, Hodg.

—

The Committee on Dr. S. G. Morton's, paper, entitled "Additional observations on a new species of Hippopotamus," reported in favor of publication in the Journal of the Academy.

—

ELECTION OF MEMBERS AND CORRESPONDENTS.

Francis Gurney Smith, M. D., and Prof. William E. Horner, of Philadelphia, were elected *Members*, and the following gentlemen elected *Correspondents*:

Henry W. Ravenel, Esq., of Black Oak, South Carolina.
Myddleton Michel, M. D., of Charleston, South Carolina.

DONATIONS TO MUSEUM

IN JANUARY AND FEBRUARY.

January 9th.

A mounted and very beautiful specimen of an albino Cervus Virginianus. From Wayne county, Pennsylvania. Presented by Dr. T. B. Wilson.

Three Motacilla, 2 species; one Budytes; three Phasianus; one Rhamphoceles. Nine specimens, 8 species, of birds' eggs, S. Africa; one do. S. America; one do. India; 8 species of bird's nests, England. Deposited by Dr. T. B. Wilson.

Carpal bones of Apteryx Owenii. Presented by Dr. Wilson.

Three casts of crania of a large species of Ourang from Gaboon, W. Africa. Presented by the Bristol Institution through Dr. T. B. Wilson.

Twenty-two shells from Australia, of the genera Chiton, Struthiolaria, Tellina, Bulimus, Cardium, Trigonia, Myochama, and Clavagella. Eighty-seven shells from California and Peru, of the genera Venus, Cytherea, Chama, Cardium, Spondylus, Amphidesma, Arca, Donax, Mytilus, Anomia, Mytilicardia, Mactra, Pholas, Parapholas, Petricola, Anatina, Sanguinolaria, Mysia, Pectunculus, Ranella, Murex, Purpura, Oliva, Cassis, Cancellaria, Conus, Pyrena, Ovula, Triton and Crepidula. Presented by Dr. Wilson.

Numerous small and rare British shells, and a stone with Orbicula adhering, comprising 18 species dredged up on the English coast and 3 species Helix. Presented by Mr. McAndrew, of England, through Dr. Wilson.

Fifteen fossil shells from the Miocene of France, and a group of fossil fish from the tertiary of France. Presented by M. Ed. Verreaux, of Paris, through Dr Wilson.

A fossil fish from Oberstein. Presented by Mr. Weissmuller, of Paris, through Dr Wilson.

Specimen of labarynthine Coal, from England. Presented by the Bristol Institution, through Dr. T. B. Wilson.

Fine specimen Solaster papposa, Pembrokeshire; and two specimens Sphinx, one species; Metopsilis, one species; Smerinthus, one. From Pembrokeshire, S. Wales. Presented by Mr. Edward Wilson.

January 16th.

Two specimens of Blennius punctatus, from Cape May, New Jersey. From Mr. Theoph. Beesley.

February 6th.

Nine species Helix, one Helicina, one Physa, three Pupa, five Cylindrella, one Succinea: from Florida and Cuba. Presented by Dr. A. A. Gould.

Fifty specimens, twenty-two species of Shells from Scotland, of the following genera: Pecten, Mactra, Venerupis, Modiola, Alasmodonta, Nassa, Cardium, Venus, Trochus, Cytherea, Natica, Bulla, Psammobia, Lima, Nerita, Lottia. Received from Wm. Gourlie, Jr., of Glasgow, through Dr. Watson, in exchange.

Ten species of Shells from Cape May. Seventy-three specimens, twelve species, Crustacea, from Cape May, of the following genera: Platyonichus, Lupa, Ocypoda, Gelasimus, Hippa, Pagurus, Palæmon, Caprella, Amphithoe, Stenosoma, Sphæroma. Presented by M. E. Griffith.

Four specimens Libinia dubia, and one of Platyonichus, from Beesley's Point N. J. Eight specimens, six species of Birds, from Great Egg Harbor, as follows: Turdus, Candris, Fringilla, Charadrius, Tringa. Presented by Mr. Samuel Ashmead.

Five specimens, two species, of Ammodytes and Lebias,—and the head of Carcharias, Cape May; three Sertularia, three Cirrhipeda, and three Annelida, from Cape May. From M. E. Griffith.

Fourteen well conditioned skins of Mammalia, as follows: Cavia aguta,—var. Stentor rufus, Cebus monachus, Eriodon hypoxanthus, Kerodon moco, Didelphis Azaræ, Didelphis cancrivora, Gulo barbara, do., var., Felis mitis, Canis Azaræ, Felis jaguarondi, var. rufus, Procyon cancrivora, Simia ——? Received in exchange from M. Moricand, Geneva, Switzerland.

Fine specimen, in spirits, of Lachesis mutus, Demarara. Presented by Mr. Wm. Hembel.

February 13th.

Two fine specimens of Columbite, Haddam, Connecticut. Presented by Prof. Johnston, of Middletown, Conn.

Right half of inferior maxilla of Castor fibre, from marl of New Jersey. Presented by Mr. Charles T. Budd.

February 20th.

Caprimulgus Nuttalii, Aud., and Colaptes Ayresii, Aud., fine specimens; from the Upper Missouri. Presented by Mr. J. J. Audubon.

DONATIONS TO LIBRARY.

IN JANUARY AND FEBRUARY, 1849.

January 2d.

Indicis generum Malacozoorum primordia: conscripsit A. N. Heermannsen. fascic. 1—9. 8vo. From Mrs. Lucy W. Say.

Verzeichniss der Conchylien welche sich in der Sammlung von H. E. Anton. 4to. The same.

Enumeratio Molluscorum Siciliæ. Auctore R. A. Philippi. 4to. Vol 1. The same.

Historia Molluscorum Sueciæ; a Sv. Nillson. 8vo. The same.

Beskrivelse af nogle nye Slangearter, ved. J. Th. Reinhardt. 4to. From Dr. S. G. Morton.

Fragmens d'anatomie sur l'organisation des Serpens: par G. L. Duvernoy. 8vo. The same.

Friedrich Tiedemann von den Duvernoyschen, Bartholinschen oder Cowperschen Drüsen des Weibes, &c. 4to. From the same.

Observations on Belemnites and other fossil remains of Cephalopoda, discovered by Mr. R. N. Mantell in the Oxford Clay in Wiltshire. By G. A. Mantell, Esq., LL. D. 4to. From the author.

On the structure of the maxillary and dental organs of the Iguanodon. By G. A. Mantell. 4to. · From the author.

January 9th.

American Journal of Science and Arts. 2d series. No. 19. From the Editors.

A statigraphical account of the section from Atherfield to Rocken-end on the S. W. coast of the Isle of Wight. By Wm. Henry Fitton, M. D. 8vo. and Chart. From the author.

Dr. Wilson deposited the following:

Isis von Oken. Heft v. 1848.

Phycologia Britannica. By Wm. Henry Harvey, M. D. Part 35. 8vo.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 20. 4to.

Genera of Diurnal Lepidoptera. By Edward Doubleday. Part 22. 4to.

Zoology of the voyage of the Samarang. No. 3. 4to.

History of British Mollusca. By Prof. Forbes and S. Hanley. Part. 11. 8vo.

Catalogue of the organic remains of the Permian rocks of Northumberland and Durham. By Wm. King.

Conchologia iconica. By Lovell Reeve. Part 68. 4to.

Quarterly Journal of the Geological Society of London. No. 16. 8vo.

Illustrations of the Birds of Jamaica. By Philip H. Gosse. Part 8. 8vo.

Annals and Magazine of Natural History. Vol. 2. New series. No. 11.

Memoirs of the Geological Survey of Great Britain, and of the Museum of practical Geology Vol. 2. Pts. 1 and 2. 8vo.

A history of British Birds, indigenous and migratory. By W. Macgillivray. 3 vols. 8vo.

Voyages dan l'Amerique Méridionale par Don Félix de Azara: publiés par D. A. Walckenaer. 4 vols. 8vo. Atlas. 4to.

North American Sylva: by F. A. Michaux; Supplement by Thos. Nuttall. Vol. 2. Part 2: and Vol. 2. Part 1. 8vo.

Library of Useful Knowledge. Sheep, their breeds, management and diseases. Same work. The Horse (Wm. Youatt) 8vo.

Caroli Linnei Fauna Suecica: editio altera auctior. 8vo.

An account of the interior of Ceylon and of the Inhabitants. By John Davy, M. D. 4to.

Travels in Hungary. By Robert Townson, LL. D. 4to.

P. S. Pallas, M. D. Elenchus Zoophytorum. 8vo.

Catalogue of the Books, &c in the Library of the Geological Society of London: Do. of the works in Medicine and Natural History contained in the Radcliffe Library.

West of England Journal of Science and Literature. Nos. 1—5—(in one vol. 8vo)

Introduction to Botany. By Priscilla Wakefield. 3d edition. 8vo.

Descriptions and figures of Petrifactions found near Bath. By John Walcott, Esq 8vo.

Introduction to the natural history and classification of insects. By Priscilla Wakefield. 8vo.

January 16th.

The Vegetable Kingdom. By John Lindley, Ph. D. &c. 8vo. Deposited by Dr. Griffith.

Hortus Collinsonianus. By L. W. Dillwyn. 8vo. From the author.

Materials for a Fauna and Flora of Swansea and the neighbourhood. By L. W. Dillwyn. 8vo. From the same.

Smithsonian contributions to knowledge. Vol. 1. Ancient Monuments of the Mississippi. By E. G. Squier, and E. H. Davis, M. D. 4to. From the Smithsonian Institution.

Manual de Geologia: extractado de la Lethaea Geognostica de Bronn.; por And. Man. del Rio. Folio. From Mr. Conrad.

Tabacologia: hoc est Tabaci seu Nicotianæ descriptio: par J. Neandrum Bremanum. 4to. Deposited by Dr. Griffith.

Casparis Barlæi Res Brasiliæ. Editio secunda. 12mo. From the same.

Angeli Salæ Saccharologia. &c. 12mo. From the same.

The following were deposited by Dr. Wilson:

Nouveau système de Minéralogie: par J. J. Berzelius: traduit du Swedois. 8vo.

Tableau de la distribution méthodique des espéces minérales suivie dans le cours de Minéralogie en 1833. Par M. Alex. Brongniart

Cosmos, essai d'une description physique du monde, par Alex. de Humboldt. 2 vols 8vo.

Principles of Physics and Meteorology. By J. Müller.

Revue Zoologique. No. 9. 1844.

Comptes rendus. Tome 27. Nos. 12—18, et index du Tome 26. 4to.

February 6th.

Histoire naturelle des principales productions de l'Europe méridionale, &c. Par A. Risso. Tome 4. 8vo. (mollusques.) Mrs. L. W. Say.

Galerie des Mollusques, ou catalogue des mollusques et coquilles de museum de Douai. Par M. M. Botiex et Michaud. Tomes 1 et 2, et Atlas. 8vo. From the same.

Complément de l'histoire naturelle des Mollusques de la France de J. P. R. Draparnaud. Par A. L. Gaspard Michaud. 4to. From the same.

Monograph of the fossil Squalidæ of the United States. By Robert W. Gibbes, M. D. 4to. From the author.

February 13th.

Report on the Geology of South Carolina. By M. Tuomey. 4to. From the State of South Carolina.

Die Bernstein und de in ihm befindlichen. Pflanzenreste der Vorwelt von Prof. H. R. Goeppert und Dr. G. C. Berendt. Folio. From Dr. Berendt.

Neueste Schriften der Naturforschenden Gesellschaft in Danzig. Vol. 4. Part 2. 4to. From the Society.

Gelehrte Anzeigen, herausgegeben von Mitgliedern der f. bayer. Acad. der Wissenschaften. 1847. Parts 24, 26 4to. From the Academy.

Bulletin der Königl. Akad. der Wissenschaften. 1847. Nos. 8—34. 4to. From the same.

Abhandlungen der Mathematisch-Physikalischen Classe der König. Bayer. Acad der Wissench. Vol. 5. Part 1. 4to. From the same.

The following were deposited by Dr. Wilson :

Thesaurus Conchyliorum. By G. B. Sowerby, Jr. Part 9. 8vo.

Illustrations of British Mycology. By Mrs. T. J. Hussey. 4to. Part 21.

Zoologia typica. By Louis Fraser. Parts 12 and 13. Folio.

The Genera of Birds. By George R. Gray. No. 46. 4to.

The Genera of Diurnal Lepidoptera. By Edward Doubleday. No. 23. Folio.

Annals and Magazine of Natural History. Vol. 2. Second series. No. 12.

History of British Mollusca and their Shells. By Prof. Forbes and S. Stanley, Part 12. 8vo.

Contributions to Ornithology. 8vo. No. 2. 1848. (Sir W. Jardine.)

Conchologia iconica. By Lovell Reeve. Part 69. 4to.

Illustrations of the Birds of Jamaica. By Philip H. Gosse. 8vo. No. 9.

Phycologia Britannica. By Wm. Henry Harvey, M. D. No. 36.

List of specimens of Birds in the collection of the British Museum. Part 2. 12mo.

The Ornithologists' Guide to the Islands of Orkney and Shetland. By Robert Dunn. 8vo.

An elementary treatise on Mineralogy. By Wm. Philips, 5th edition: by Francis Alger. 8vo.

Panzoologicomineralogia, or a complete history of Animals and Minerals. By Robert Lovell. 12mo.

North American Sylva. By A. Michaux. Supplement by T. Nuttall. Vol. 1. Part 2. 8vo.

February 20th.

Reports of the Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire, 1847. From Henry Denny, Esq.

Twenty-eighth Report of the Leeds Philosophical Society. From the same.

Catalogue of the Unios, Alasmodontas and Anodontas of the Ohio and its Northern Tributaries, adopted by the Western Acad. Nat. Sciences of Cincinnati. From the Academy.

Second Annual Report of the Regents of the University of the State of New York, on the condition of the Cabinet of Nat. History. January, 1849. From the Regents.

Researches critical and experimental upon the capillary circulation. By Bennett Dowler, M. D. From the author.

Dr. Wilson deposited the following:

Phycologia Britannica. By Wm. H. Harvey, M. D. No. 37. 8vo.

History of British Mollusca. By Prof. Forbes and Sylvanus Hanly. No. 13. 8vo.

Annals and Magazine of Nat. Hist. Vol. 2. New series. No. 13.

Illustration of the Birds of Jamaica. By Philip H. Gosse. No. 10.

Comptes rendus. Tome 27. Nos. 19, 20.

Illustrations of Indian Ornithology. By T. C. Jerdon. No. 4. 4to.

Illustrations of British Micology By Mrs. T. J. Hussey. No. 22. 4to.

Conchologia iconica. By Lovell Reeve. Part 70. 4to.

The genera of Diurnal Lepidoptera. By Edward Doubleday. Part 24. 4to.

Jac. Theo. Klein Stemmata Avium. 4to.

J. Theo. Klein, Ova Avium. 4to.

Ornithologische Gallerie. Von C. F. Dubois. Nos. 1—16. 8vo.

Beiträge zur Ornithologie Griechenlands von H. G. von der Muhle. 8vo.

Die Wirbelthiere Europa's von A. Graef. Keyserling and Prof. J. H. Blasius. Part 1. 8vo.

Monographia Heliceorum viventium. Auctore Dr. Lud. Pfeiffer. Fascic. 1—7. 8vo.

Synopsis methodica Mulluscorum quæ in Musæo Menkeano adservantur Auctore C. Theo. Menke, M. D.

Molluscorum Novæ Hollandæ specimen scripsit C. Theo. Menke. 4to.

Museum Senckenbergianum. Vols. 1 and 2. and Vol. 3. Nos. 1 and 2. 4to.

Catalogue systematique et raisonne des curiosities de la nature et de l'art, qui composent le cabinet de M. Davids. 3 vols. 8vo.

Traité élementaire de mineralogie. Par S. F. Beudant. 2 vols. 8vo.

Prodromo della Mineralogie Vesuviana di T. Monticelli. 8vo., and Atlas 8vo.

Recherches sur l'ostéolcgie et la myologie des Batraciens à leurs différens ages. Par Ant. Dugès. 4to.

Iconologie de l'organe de l'ouie: par S. T. Sœmmering. Traduit de Latin par A. Rivallié. 8vo., and Atlas folio.

Description figurée de l'oeil humain, traduit de l'ouvrage de S. T. Sœmmering. Par A. P. Demours. 4to.

Memoire sur l'organization des Cirrepédes. Par G. J. Martin St. Ange. 4to.

The Nervous System of the Human Body. By Charles Bell. 4to.

Nachträge zur Classification der Saugethiere und Vögel. Von J. J. Kaup.

The former are correct, and the latter appear to have been led into error by the statement of Buffon who figures the C. jota in Pl. Enl. 187, and states in the text Pl. Enl. i, p. 136, that it is called "ouroua ou aura." Daudin, Traité d'Orn. ii. p. 19, under C. aura, cites Buffon's plate. Spix. Av. Bras. i. p. 2, describes the C. jota under the name of Cathartes aura, and also cites Buff. Pl. Enl. 187. Vieillot, in Ois. de l'Am. Sept. pl. 2, figures C. jota, and in his text cites Vultur aura, Linn. as a synonyme, though he also figures the true C. aura, Linn., pl. 2, bis. and gives its correct name.

M. D'Orbigny, in Voy. dans l'Am. Merid. Ois. p. 31, although he describes and figures the C. aura by its proper name, yet quotes C. jota, "Ch. Bonap.," and Vultur atratus, Wilson, Orn. Am. ix. pl. 75, fig. 1, as synonymes, which is an error, as he would readily have ascertained by referring to Wilson's figure as quoted by himself.

There is moreover a further difficulty. It seems desirable to know whether Linnæus described from North or South American specimens, as the Prince De Wied has described the North American bird as a species distinct from the C. aura, Linn., under the name of Cathartes septentrionalis, De Weid ;—the original description I have not seen, but it is copied at length in Tschudi's Fauna Peruana, Orn. p. 74.

It is probably now quite impossible to ascertain from what part of America the specimens described by Linnæus were actually brought, but fortunately the difficulty last stated, as well as all the former, is easily settled without such knowledge.

As synonymous with Vultur aura, Linnæus himself in Syst. Nat. 12th edition, i., p. 122, cites Catesby, Carolina, 1. pl. 6, and Sloane's Jamaica ii., pl. 254, both of which are clearly the same bird as that figured by Wilson and Audubon, under the same name, so it would appear sufficiently evident that whatever other species may inhabit America, the common bird of North America is the true C. aura, Linn. I beg leave to add, that that excellent observer and accurate naturalist Mr. George Ord, expressly states, in Am. Orn. ix., p. 99, "The Vultur which Sir Hans Sloane has figured and described is undoubtedly the Vultur aura," that is to say, it is the same as the species figured by Wilson.

The figure of the head in D'Orbigny's Voyage dans l'Am. Merid., pl. 1, fig. 3, appears to me to be that of the true C. aura, Linn., or the same as the North American species, and the same as that described by Spix Av. Bras.. 1, p. 2, under the name of Cathartes ruficollis, Spix, which is, therefore, a synonyme.

5. *Cathartes Burrovianus*, Cassin.

This is a species described by me from a specimen brought from Mexico, and is the smallest of all known Vultures. The Rivoli collection contains one specimen of this bird, which is more adult than the specimen described.

This may be the species which is alluded to by Pennant, in Arctic Zoology, (as quoted by Mr. Ord,) who says that the Turkey Vulture of the West Indies is "far inferior in size to that of North America."

The plumage of the specimen in the Rivoli collection, is clear black, like that of the specimen previously in the collection of the Academy; the secondaries having slightly paler margins, but with no mixture or edging of brownish which prevails in the plumage of all the specimens of C. aura which I have seen. The feathers on the neck, instead of forming a perfectly circular, or ring-like ruff, as in C. aura, in the present species, extend decidedly upwards on the back of the neck; in the specimen here alluded to, almost to the occiput. The following are the measurements of the two species.

	C. aura, (Linn.)	C. Burrovianus, Cassin.
Total length from tip of bill to end of tail (mounted specimens,)	30 inches.	22 inches.
Wing from flexure to tip of longest primary,	23 "	18 "
Tail,	12 "	8½ "
Tarsus,	2¾ "	2½ "
Bill from gap direct to tip,	2½ "	2 "

6. *Cathartes jota*, (Molina.)

I am not without suspicion that the bird described by the Abbe Molina, in Essay on the Natural History of Chili, p. 245, (M. Gruvel's French translation,) is not the same as the Vultur atratus, Bartram, Travels, p. 289.

There are in the collection of the Academy three specimens which are clearly the latter, being the same birds given by Wilson and Audubon; one of these was presented by Mr. Audubon, another was obtained in Florida, and presented by Dr. McEuen; the third belongs to the Rivoli collection, but there is a fourth specimen which is materially different. It belongs to the Rivoli collection and is without label.

This last specimen is not only much smaller than the former, but it has the head quite smooth and not carunculated or rugose, as in the common species of North America. In fact its head resembles that of the C. aura, (Linn.,) more than it does the C. atratus, (Bart.,) and is covered by such a comparatively clear and smooth skin that I can readily suppose it to be colored in the living bird, which would be strictly as described by the Abbe Molina, or at least as his French translator says for him, p. 246, "sa tête est sans plumes, converte d'une peau ridée *de couleur rousse*." Mr. Audubon, Orn. Biog. ii., p. 52, describes his bird as "the head having a black, rugose, carunculated skin, sparsely covered with short hairs and downy behind," which is precisely the case in the three specimens alluded to, but I quote Mr. Audubon's description, because he, as well as the Abbe Molina, probably described from recent specimens.

The one specimen here alluded to is as above stated smaller than either of the others, as will appear by the following measurements,

	Mr. Audubon's specimen.	Smaller specimen.
Total length from tip of bill to end of tail.	25 inches	19½
Wing from the flexure to tip of longest primary,	17 "	15½
Tail,	7½ "	7

7. The family Vulturidæ has been arranged apparently in a manner only provisional according to the Natural System, by Mr. Swainson, Lardner's Cab. Cy. Birds, i. p. 280, and ii. p. 205.

Notwithstanding such high authority as Mr. Swainson, I am disposed to think the Gypinæ (of my catalogue) the subtypical group, and the Sarcoramphinæ appear to me to present characters sufficient to warrant the conclusion that they are the true Rasorial Vultures.

In confirmation of my opinion of the Sarcoramphinæ, I may refer to the well known fact that the species of Cathartes are amongst the most confidant and familiar of birds, and that such disposition seems also to extend to Sarcoramphus. In a note to "Remarks on the Birds observed in Upper California," by Dr. William Gambel, in Jour. Acad. Nat. Sci., Philada. new series, (Quarto) Vol. i. p. 25, he mentions having seen at Valparaiso a specimen of the Condor so completely domesticated that it was allowed to roam the city at large, and so entirely docile that it offered no resistance to being handled, and would even permit the caresses of children, or their attempting to get upon its back. "In fact," he continues, "I think I have never met with any bird which exhibited more tameness or greater confidence in man than this large Condor.

After first premising that in all matters relating to Natural History I am a strict circularian of the school of MacLeay, Vigors and Swainson, I beg leave to present the following as my views of the classification of the subfamilies of Vulturidæ.

1. Typical, Vulturinæ.
2. Subtypical, Gypinæ.
3. Natatorial, Gypaëtinæ.
4. Grallatorial, Neophrinæ.
5. Rasorial, Sarcoramphinæ.

8. The collection of this Academy contains, probably, all the known Vultures. The only exceptions being, first, the species labelled "Gyps tenuirostris, Hodg.?" it is possible may not be that bird ; and second, a bird figured in Brown's Illustrations of Zoology, pl. 1, London, 1776, which is Falco ambustus, Gm., and Vultur ambustus (Gm.) of Latham, and said to inhabit the Falkland Islands, is not in the collection. I suspect, however, that the latter is not truly a Vulture, though it is difficult to determine from the plate above cited.

There are exhibited in the collection of the Academy sixty-eight specimens of Vultures, which represent nineteen species, including as species the Gyps indicus, (Temm.) G. Kolbii, (Daud.) and G. tenuirostris, Hodg.

The Committee on Dr. S. G. Morton's, paper, entitled "Additional observations on a new species of Hippopotamus," reported in favor of publication in the Journal of the Academy.

ELECTION OF MEMBERS AND CORRESPONDENTS.

Francis Gurney Smith, M. D., and Prof. William E. Horner, of Philadelphia, were elected *Members*, and the following gentlemen elected *Correspondents*:

Henry W. Ravenel, Esq., of Black Oak, South Carolina.
Myddleton Michel, M. D., of Charleston, South Carolina.

DONATIONS TO MUSEUM

In January and February.

January 9th.

A mounted and very beautiful specimen of an albino Cervus Virginianus. From Wayne county, Pennsylvania. Presented by Dr. T. B. Wilson.

Three Motacilla, 2 species; one Budytes; three Phasianus; one Rhamphocœles. Nine specimens, 8 species, of birds' eggs, S. Africa; one do. S. America; one do. India; 8 species of bird's nests, England. Deposited by Dr. T. B. Wilson.

Carpal bones of Apteryx Oweni. Presented by Dr. Wilson.

Three casts of crania of a large species of Ourang from Gaboon, W. Africa. Presented by the Bristol Institution, through Dr. T. B. Wilson.

Twenty-two shells from Australia, of the genera Chiton, Struthiolaria, Tellina, Bulimus, Cardium, Trigonia, Myochama, and Clavagella. Eighty-seven shells from California and Peru, of the genera Venus, Cytherea, Chama, Cardium, Spondylus, Amphidesma, Arca, Donax, Mytilus, Anomia, Mytilicardia, Mactra, Pholas, Parapholas, Petricola, Anatina, Sanguinolaria, Mysia, Pectunculus, Ranella, Murex, Purpura, Oliva, Cassis, Cancellaria, Conus, Pyrena, Ovula, Triton and Crassatella. Presented by Dr. Wilson.

Numerous small and rare British shells, and a stone with Orbicula adhering, comprising 18 species dredged up on the English coast and 3 species Helix. Presented by Mr. McAndrew, of England, through Dr. Wilson.

Fifteen fossil shells from the Miocene of France, and a group of fossil fish from the tertiary of France. Presented by M. Ed. Verreaux, of Paris, through Dr. Wilson.

A fossil fish from Oberstein. Presented by Mr. Weissmuller, of Paris, through Dr. Wilson.

Specimen of labyrynthine Coal, from England. Presented by the Bristol Institution, through Dr. T. B. Wilson.

Fine specimen Solaster papposa, Pembrokeshire; and two specimens Sphinx, one species; Metopsilis, one species; Smerinthus, one. From Pembrokeshire, S. Wales. Presented by Mr. Edward Wilson.

January 16th.

Two specimens of Blennius punctatus, from Cape May, New Jersey. From Mr. Theoph. Beesley.

February 6th.

Nine species Helix, one Helicina, one Physa, three Pupa, five Cylindrella, one Succinea; from Florida and Cuba. Presented by Dr. A. A. Gould.

Fifty specimens, twenty-two species of Shells from Scotland, of the following genera: Pecten, Mactra, Venerupis, Modiola, Alasmodonta, Nassa, Cardium, Venus, Trochus, Cytherea, Natica, Bulla, Psammobia, Lima, Nerita, Lottia. Received from Wm. Gourlie, Jr., of Glasgow, through Dr. Watson, in exchange.

Ten species of Shells from Cape May. Seventy-three specimens, twelve species, Crustacea from Cape May, of the following genera: Platyonichus, Lupa, Ocypoda, Gelasimus, Hippa, Pagurus, Palæmon, Caprella, Amphithoe, Stenosoma, Sphæroma. Presented by M. E. Griffith.

Four specimens Libinia dubia, and one of Platyonichus, from Beesley's Point N. J. Eight specimens, six species of Birds, from Great Egg Harbor, as follows: Turdus, Calidris, Fringilla, Charadrius, Tringa. Presented by Mr. Samuel Ashmead.

Five specimens, two species, of Ammodytes and Lebias,—and the head of Carcharias, Cape May; three Sertularia, three Cirrhipeda, and three Annelida, from Cape May. From M. E. Griffith.

II. *Subfamily GYPINÆ.*

1. Genus GYPS, Savigny.

1. GYPS FULVUS, (Gm.) *Gould, B. of Eur.* pl. 1. *Buffon. Pl. Enl.* 426.
   Vultur fulvus, *Gmelin. Syst. Nat.* i. p. 249.
   Vultur percnopterus, *Lath. Ind. Orn.* i. p. 2. (*not Linn.*)
   Vultur leucocephalus, *Meyer. Tasch. Deut.* i. p. 7.
   Vultur trincalos, *Bechstein. Nat. Deut.* ii. p. 479.
   Vultur persicus, *Pallas. Zoog.* i. p. 377.
   Vultur albicollis, *Lindermayer. Isis*, 1843, p. 324?

   1. Adult, Europe, presented by A. L. Heerman, M. D.
   2. middle age, Europe, from the Rivoli collection.
   3, 4. Cape of Good Hope, from the same.
   5. young, Cape of Good Hope, from the same.
   6. Adult male, India, from Capt. Boys' collection.
   7. Adult female, India, from the same.

   Vultur indicus, *Temminck. Pl. col.* 26, (*plate not text.*)

   8, 9. Adults? Cape of Good Hope? from the Rivoli collection.
   10, 11. younger, Africa? from the same.

   Vultur Kolbii, *Daudin. Traité d'Orn.* ii. p. 15.

   12, 13. South Africa, from the Rivoli collection.

   Gyps tenuirostris, *Hodgson.* (*ubi?*) *Gray's Genera*, pl. 3.?

   14. India, from the Rivoli collection.
   15. young female. ——— ?

2. GYPS BENGALENSIS, (Gm.) *Gray, Ill. Ind. Zoo.* pl. 14, 15.
   Vultur bengalensis, *Gm. Syst. Nat.* i. p. 245.
   Vultur chaugoun, *Daud. Traité d'Orn.* ii. p. 14. *Le Vaill. Ois. d'Afr.* pl. 11.
   Vultur leuconotus, *Gray. Ill. Ind. Zoo.* pl. 15.
   Vultur indicus, *Lath. Ind. Orn.* i. p. 7 ?

   1. Adult male, Pondicherry, from the Rivoli collection.
   2. Adult, India, from the same.
   3, 4, 5. younger, India, from the same.

III. *Subfamily GYPAËTINÆ.*

1. Genus GYPAËTOS, Storr.

1. GYPAËTOS BARBATUS, (Linn.) *Gould, B. of Eur.* pl. 4. *Gray's Genera*, pl. 1.
   Vultur barbatus, *Linn. Syst. Nat.* i. p. 123.
   Vultur niger et barbarus, *Gm. Syst. Nat.* i. p. 248, 250.
   Falco barbatus et magnus, *Gm. Syst. Nat.* i. p. 252.

Vultur alpinus, ***Briss. Orn.*** **i. p. 464.**
Vultur aureus, ***Gesner.***
Vultur bœticus, ***Aldrovandus.***
Gypaëtos grandis, *Storr.*
Gypaëtos castaneus, *Daud. Traité d'Orn.* ii. p. 26.
Gypaëtos leucocephalus et melanocephalus, *Meyer. Tasch. deuts. Vög.* i. p. 9, 10.
Gypaëtos Hemachalanus, *Hutton. Jour. As. Soc. Beng.* 1838, p. 22. ?
Gypaëtus meridionalis, *Blasius. Rüpp. Uebersicht.* pl. 1.?
Phene ossifraga et gigantea, *Savigny.*

1. Adult, Europe, from the Rivoli collection.
2, 3. young, Europe, from the same.
4. G. meridionalis, Blas. Adult, Northern Africa, from M. Rüppell's collection. Presented by J. E. Holbrook, M. D.
5. G. hemachalanus, Hutton? Adult male, India, from Capt. Boys' collection.
6. the same. Adult female, India, from the same.

IV. *Subfamily NEOPHRINÆ.*

1. Genus NEOPHRON, Savigny.

1. NEOPHRON PERCNOPTERUS, (Linn.) *Selby, Brit. Orn.* pl. A. *Gould. B. of Eur.* pl. 14.
Vultur percnopterus, *Linn. Syst. Nat.* i. p. 123.
Vultur fuscus, *Gm. Syst. Nat.* i. p. 248.
Vultur leucocephalos et ægyptius, *Briss. Orn.* i. p. 457, 465.
Vultur ginginianus, *Daud.* ii. p. 20, 21.
Vultur meleagris, *Pallas.*
Vultur stercorarius, *La Peyrouse.*
Percnopterus ægyptiacus, *Stephens. Gen. Zoo.* xiii.

1, 2. Adult, Africa, from the Rivoli collection.
3. Adult, Abyssinia, from M. Rüppell's collection. Presented by J. E. Holbrook, M. D.
4, 5. young, Europe, from the Rivoli collection.
6. young, Europe?

2. NEOPHRON PILEATUS, (Burch.) *Temm. Pl. col.* 222.
Vultur pileatus, *Burchell. Trav. S. Afr.* p. 195.
Cathartes monachus, *Temm. Pl. col.* 222.
Percnopterus niger, *Lesson. Traité d'Orn.* i. p. 29.
Neophron carunculatus, *A. Smith. S. Afr. Quar. Jour.* ii. p. 253?

1, 2. Adult females, Africa, from the Rivoli collection.
3. young male, Country of the Ashantees, Western Africa.

2. Genus GYPOHIERAX, Rüppell.

1. GYPOHIERAX ANGOLENSIS, (Gm.) *Gray's Genera,* pl. 4. *Jard. & Selby. Ill. N. S.* pl. 13.

Falco angolensis, *Gmelin. Syst. Nat.* i. p. 252.
Polyborus? hypoleucus, *Bennett. Proc. Zoo. Soc. Lond.* 1830, p. 13.

1. Male, nearly adult, Rio de Bontry, coast of Guinea.
2. Adult female, Western Africa, from the Rivoli collection.

V. *Subfamily* SARCORAMPHINÆ.

1. Genus SARCORAMPHUS, Dumeril.

1. SARCORAMPHUS GRYPHUS, (Linn.) *Temm. Pl. col.* 133, 408, 494.
Vultur gryphus, *Linn. Syst. Nat.* i. p. 121.
Vultur magellanicus, *Shaw. Mus. Leverianum.* pl. 1.
Vultur Condor, *Shaw. Gen. Zool.* i. p. 2.

1. Adult male, South America, from the Rivoli collection.
2. Adult male, South America.
3. Adult female? South America, from the Rivoli collection.
4. young male, Peru, from Dr. J. K. Townsend's collection.

5, 6. young, from the Rivoli collection.

2. SARCORAMPHUS PAPA, (Linn.) *Buff. Pl. Enl.* 428. *Vieill. Gal.* pl. 3.
Vultur papa, *Linn. Syst. Nat.* i. p. 122.
Vultur sacra, *Bartram. Travels,* p. 289. *Lath. Gen. Hist.* i. p. 11?
Vultur monachus, *Klein.*
Vultur elegans, *Gerini.*

1. Adult male, South America, from the Rivoli collection.
2. Adult female, Peru. Presented by W. S. W. Ruschenberger, M. D., U. S. Navy.

2. Genus CATHARTES, Illiger.

1. CATHARTES CALIFORNIANUS, (Shaw.) *Aud. B. of Am.* pl. 411. *Gray's Genera,* pl. 2.
Vultur californianus, *Shaw. Nat. Misc.* ix. pl. 301.
Cathartes vulturinus, *Temm. Pl. col.* 51.

1. Adult, California.

2. CATHARTES JOTA, (Mol.) *Aud. B. of Am.* pl. 106. *Wilson. Am. Orn.* pl. 75, fig. 2.
Vultur jota, *Molina. Saggio sulla Storia Naturale del Chili.*
Vultur urubu, *Vieill. Ois. de l'Am. Sept.* pl. 2.
Vultur atratus, *Bartram. Trav.* p. 289.
Vultur fœtens, *Illiger.* (*Auct.*) *ubi?*
"Vultur aura, Linn." *Vieill. Ois. de l'Am. Sept.* i. p. 23.
"Cathartes aura," *Spix. Av. Bras.* i. p. 2.

1. Adult, Florida. Presented by Thos. McEuen, M. D.
2. Adult female, United States. Presented by Mr. J. J. Audubon.
3. Adult, South America? from the Rivoli collection.
4. nearly adult, South America, from the same.

3. CATHARTES AURA, (Linn.) *Aud. B. of Am.* pl. 151. *Wilson, Am. Orn.* pl. 75, fig. 1.
Vultur aura, *Linn. Syst. Nat.* i. p. 122.
Vultur brasiliensis, *Briss. Orn.* i. p. 468. *Sloane's Jamaica*, pl. 254.
Cathartes ruficollis, *Spix. Av. Bras.* i. p. 2. *Catesby's Carolina*, pl. 6.
Cathartes septentrionalis, *De Wied. Tschudi, Faun. Peruana. Orn.* p. 74.

1. Adult male, Florida. Presented by Thos. McEuen, M. D.
2. Adult, United States,
3. younger, from the Rivoli collection.
4. chick, South America?

4. CATHARTES BURROVIANUS, Cassin. *Proc. Acad. Nat. Sci. Philada.* ii. p. 212, (*March*, 1845.)

1. Adult, South America? from the Rivoli collection.
2. younger, Mexico. Presented by Marmaduke Burrough, M. D.

CATALOGUE

OF THE

STRIGIDÆ

IN THE COLLECTION OF

THE ACADEMY OF NATURAL SCIENCES

OF PHILADELPHIA.

BY

JOHN CASSIN.

III. Family STRIGIDÆ.

I. *Subfamily STRIGINÆ.*

1. Genus STRIX, Linn.

1. **STRIX FLAMMEA**, Linn. *Syst. Nat.* i. p. 133. *Gould*, *B. of Eur.* pl. 36. *Selby. Brit. Orn.* pl. 24.
Strix guttata, *Brehm. Vög. Deuts.* p. 106.

   1. Adult male, Europe, from the Rivoli collection.
   2, 3. Adult, France, from the same.
   4. Adult male, Europe.
   5. Adult female, France. Presented by J. Trudeau, M. D.
   6. very young, France, from the Rivoli collection.
   7. Adult, Western Africa. Presented by Mr. Geo. N. Lawrence.

2. **STRIX PRATINCOLA**, Bonaparte. *Geog. & Comp. List.* p. 7. *Aud. B. of Am.* pl. 171.
Strix americana, *Aud. Syn.* p. 25.
"Strix flammea, Linn." *Wilson. Am. Orn.* vi. p. 57.

   1. North America? from the Rivoli collection.
   2. Adult female, New Jersey, from Mr. John Cassin's collection.

3. **STRIX PERLATA**, Licht. *Cat. Dup. Berlin Museum*, p. 59.
Strix furcata, *Temm. Pl. col.* 432.

   1. Adult, Cuba. Presented by Richard C. Taylor, Esq.
   2. middle age, from the Rivoli collection.
   3. young, California, from Dr. Wm. Gambel's collection.

4. **STRIX TENEBRICOSUS**, Gould. *Proc. Zool. Soc. London*, 1845, p. 80. *B. of Aust.* i. pl. 30.
Strix migera. *Catalogue of the Rivoli collection.*

   1. Adult female, Australia, from the Rivoli collection.
   2. young male? N. S. Wales, from Mr. John Gould's collection.

5. **STRIX CASTANOPS**, Gould. *Proc. Zoo. Soc. London*, 1836, p. 140. *B. of Aust.* i. pl. 28.

   1. Male, Van Dieman's land, from Mr. Gould's collection.
   2. Female, Van Dieman's land, from the same.
   3. young male, Van Dieman's land, from the same.
   4. Adult female, Australia, from the Rivoli collection.

6. STRIX PERSONATA, Vigors. *Proc. Zoo. Soc. Lond.* 1831, p. 60. *Gould, B. of Aust.* i. pl. 29.
Strix cyclops, *Gould. Proc. Zoo. Soc. Lond.* 1836, p. 140.

1. Adult male, Western Australia, from Mr. Gould's collection.
2. Male, New South Wales, from the same.
3. Male, Southern Australia, from the same.
4, 5. Adult female, S. Australia, from the same.
6, 7. Females, Australia, from the Rivoli collection.
8, 9. younger, Australia, from the same.
10. Strix cyclops, Gould. Swan River, Australia, from the same.

7. STRIX DELICATULA, Gould. *Proc. Zoo. Soc. Lon.* 1836, p. 140. *B. of Aust.* i. pl. 31.

1, 2. Adult males, Australia, from Mr. Gould's collection.
3. Female, Australia, from the same.
4, 5. Australia, from the Rivoli collection.
6. Australia. Presented by C. Huffnagle, M. D.

8. STRIX CANDIDA, Tickell. *Jour. As. Soc. Bengal*, ii. p. 57. *Jerdon, Ill. Ind. Orn.* pl. 30.
Strix longimembris, *Jerdon. Madras Jour. Lit. and Sci.* 1839, p. 86.

1. Male, India.

9. STRIX JAVANICA, Gm. *Syst. Nat.* i. p. 295. *Gray & Mitch. Gen. Birds*, pl. 15.

1. Female, India.
2. India? from the Rivoli collection.
3. Adult male, from Capt. Boys' collection.
4. Adult female, from the same.

10. STRIX CAPENSIS, A. Smith. *S. Af. Quart. Jour.* 1836. *Ill. S. Af. Zoo. Aves*, pl. 45.
Strix flammeoides. *Catalogue of the Rivoli collection.*

1, 2. Adult females, Cape of Good Hope, from the Rivoli collection.
3. young female, Southern Africa, from the same.

2. Genus PHODILUS, Geoffroy.

1. PHODILUS BADIUS, (Horsf.) *Temm. Pl. col.* 318.
Strix badia, *Horsfield. Trans. Linn. Soc. Lond.* xiii. p. 139. *Zool. Res. Java*, pl. 36.

1. Male, India, from Capt. Boys' collection.

3. Genus OTUS, Cuvier.

1. OTUS VULGARIS, Fleming. *Brit. An.* p. 56. *Selby, Brit. Orn.* pl. 20.
   Strix otus, *Linn. Syst. Nat.* i. p. 132. *Gould, B. of Eur.* pl. 39.
   Otus albicollis, *Daudin. Orn.* ii. p. 213.
   Strix deminuta, *Pallas. Trav. Russ.* ii. p. 707?
   Otus europeus, *Stephens. Gen. Zool.* xiii. p. 57.
   Otus communis, *Lesson. Tr. d'Orn.* i. p. 110.
   Otus sylvestris, arboreus et gracilis, *Brehm. Vög. Deuts.* p. 121.

   1, 2, 3, 4. Adults, France, from the Rivoli collection.
   5, 6. younger, Europe, from the same.
   7. very young, Europe, from the same.

2. OTUS WILSONIANUS, Less. *Traité d'Orn.* i. p. 110. *Wilson, Am. Orn.* pl 51, fig. 3.
   Otus americanus, *Bonap. Comp. List.* p. 7.
   Strix peregrinator, *Bartram. Trav.* p. 289?

   1. Adult female, near Chester, Penna., from Mr. Cassin's collection.
   2. Adult, near Philadelphia. Presented by J. K. Townsend, M. D.

3. OTUS MEXICANUS, Gm. *Aud. B. of Am.* pl. 412.
   Strix mexicana, *Gmelin. Syst. Nat.* i. p. 288.
   Strix americana, *Gm. Syst. Nat.* i. p. 288!
   Strix longirostris, *Spix. Av. Bras.* pl. 9.
   Bubo clamator, *Vieill. Ois. d'Am. Sept.* pl. 20.

   1, 2. Adult females, Bahia, from the Rivoli collection.
   3. younger, from the same.
   4, Adult male, Cayenne.
   5. Adult, Surinam. Presented by C. Hering, M. D.

4. OTUS MADAGASCARIENSIS, A. Smith. *Cat. S. Af. Mus.*

   1. Male, Madagascar, from the Rivoli collection.

5. OTUS BRACHYOTUS, (Gm.) *Gould's B. of Eur.* pl. 40. *Wilson, Am. Orn.* pl. 23, f. 3.
   Strix brachyotos et accipitrina, *Gmelin. Syst. Nat.* i. p. 289.
   Strix agolius et ulula, *Pallas. Zoog.* i. p. 309, 322.
   Strix caspia. *Shaw. Gen. Zoo.* vii. p. 272.
   Strix tripennis, *Schrank. Fauna Boica.*
   Strix arctica. *Sparrman. Mus. Carlson.*
   Strix brachyura, *Nillson. Fauna Suecica*, p. 62.
   Otus palustris et agrarius, *Brehm. Vög. Deuts.* p. 124.

   1, 2, 3. Adult, France, from the Rivoli collection.
   4. Male, France, from the same.
   5. very young, France, from the same.
   6. Adult, Europe. Presented by A. L. Heerman, M. D.

7. Adult male, Pennsylvania. Presented by John K. Townsend, M. D.
8. Adult female, New Jersey. Presented by William Gambel, M. D.
9. Female, Cordilleras, South America.
10. Rio La Plata, South America. Presented by W. S. W. Ruschenberger, M. D., U. S. Navy.
11. Male, Northern India.
12. Adult male, India, from Capt. Boys' collection.
13, 14. Adult females, India, from the same.

6. OTUS GALAPAGOENSIS, Gould. *Proc. Zool. Soc. Lond.* 1837, p. 10. *Voy. Beagle. Birds*, pl. 3.

1. Hawaii, Sandwich Islands, from Dr. Townsend's collection.

7. OTUS CAPENSIS, A. Smith. *S. Af. Quart. Jour.* 1835. *Ill. S. Af. Zool. Aves*, pl. 67.

Otus abyssinicus, *Guerin. Rev. Zool.* 1843, p. 321. *Ferret & Galinier. Voy. Abyss. Ois.* pl. 3.

1. South Africa, from the Rivoli collection.
2. Adult, Morocco.

3. Genus SYRNIUM, Savigny.

1. SYRNIUM ALUCO, (Linn.) *Selby's Brit. Orn.* pl. 25. *Gould, B. of Eur.* pl. 47.

Strix aluco, *Linn. Syst. Nat.* i. p. 132.
Strix stridula, *Linn. Syst. Nat.* i. p. 133.
Strix soloniensis, *Gm. Syst. Nat.* i. p. 293.
Strix sylvatica, *Shaw. Gen. Zool.* vii. p. 253.
Strix sylvestris, alba, noctua et rufa, *Scopoli. Ann. Hist. Nat.*
Syrnium ululans, *Savigny. Egypte* xxiii. p. 299.

1, 2. Males, Europe, from the Rivoli collection.
3. Female, France, from the same.
4. very young, France, from the same.
5, 6, 7. Europe.

2. SYRNIUM NEBULOSUM, (Gm.) *Wilson's Am. Orn.* pl. 33, f. 2. *De Kay, Nat. Hist. New York, Orn.* pl. 10.

Strix nebulosa, *Gmelin. Syst. Nat.* i. p. 291. *Aud. B. of Am.* pl. 46.
Strix chichictli, *Gm. Syst. Nat.* i. p. 296. *Lath. Gen. Hist.* i. p. 364?
Strix Fernandica, *Shaw. Gen. Zool.* vii. p. 263?

1. Adult female, Chester county, Penna. Presented by Samuel W. Woodhouse, M. D.
2. Adult, near Chester, Penna., from Mr. Cassin's collection.
3, 4. Europe? from the Rivoli collection.

3. **SYRNIUM URALENSE**, (Pall.) *Gould's B. of Eur.* pl. 44.
Strix uralensis, *Pallas. Travels Russia, Appendix,* No. 25.
Strix liturata, *Retz. Fau. Sue.* p. 79. *Temm. Pl. col.* 27.
Strix macroura, *Natterer. Meyer Tasch.* i. p. 84.
"Strix macrocephala, Meisner." *Brehm. Vög. Deuts.* p. 115.

   1. Adult, Sweden, from Mr. J. G. Kinberg's collection.
   2. Adult, Europe, from the Rivoli collection.

4. **SYRNIUM FUSCESCENS**, (Temm. & Schl.) *Fauna Japonica,* pl. 10.
Strix fuscescens, *Temm. & Schl. Faun. Jap. Aves,* p. 30.

   1. Adult female, Japan.

5. **SYRNIUM CINEREUM**, (Gm.) *Rich. & Sw. Fauna Bor. Am. Birds,* pl. 31. *Aud. B. of Am.* pl. 351.
Strix cinerea, *Gmelin. Syst. Nat.* i. p. 291.
Strix lapponica, *Retz. Fau. Sue.* p. 79.
Strix barbata, *Pallas, Zoog.* i. p. 318.
Strix acclamator, *Bartram. Travels,* p. 289.
Strix fuliginosa, *Shaw. Gen. Zoo.* vii. p. 244.

   1. Adult, Europe, from the Rivoli collection.
   2. Female, Russia.
   3. Adult female, Rocky Mountains, from Dr. Townsend's collection.

6. **SYRNIUM LEPTOGRAMMICUM**, (Temm.) *Pl. col.* 525.
Strix leptogrammica, *Temminck. Pl. col.* ii. p. (liv. 88.)

   1. Male, nearly adult, Sumatra.
   2. Female, Sumatra, from the Rivoli collection.

7. **SYRNIUM HYLOPHILUM**, (Temm.) *Pl. col.* 373.
Strix hylophila, *Temminck. Pl. co.* ii. p. (liv. 63.)

   1. nearly adult, Bogota, from the Rivoli collection.
   2. younger, Bahia, from the same.
   3. nearly adult, Rio La Plata. Presented by W. S. W. Ruschenberger, M. D., U. S. Navy.

8. **SYRNIUM FASCIATUM**, (Vieill.) *Nouv. Dict. d'Hist. Nat.* vii. p. 21?
Strix fasciata, *Vieillot, (ut supra.) Ency. Meth.* iii. p. 1288?
Syrnium zonocercus. *List of Spec. of Birds in Brit. Mus.?*

   1. South America, from the Rivoli collection.
   2. younger, Bahia, from the same.

9. **SYRNIUM VIRGATUM**, Cassin. *Proc. Acad. Nat. Sci. Philada.* iv. p. 124. (Dec. 1848.)

   1. Adult, Bogota, from the Rivoli collection.
   2. younger, South America, from the same.
   3, 4. Mexico, from Mr. W. S. Pease's collection.

5. Adult male? Trinidad, from Mr. Cassin's collection.
6. Male, Cayenne.
7. Female, Cayenne.

10. SYRNIUM ALBOGULARIS, Cassin. *Proc. Acad. Nat. Sci. Philada.* iv. p. 124. (Dec. 1848.)
1. Adult male? South America, from the Rivoli collection.
2. Female, South America, from the same.
3. Female, South America.

11. SYRNIUM SELOPUTO, (Horsf.) *Temm. Pl. col.* 230.
Strix seloputo, *Horsfield. Trans. Linn. Soc. London*, xiii. p. 140.
Strix pagadorum, *Temminck. Pl. col.* ii. p. (liv. 39.)
1, 2. Adults, Java, from the Rivoli collection.
3. young female, Java.

12. SYRNIUM SINENSE, (Lath.) *Gray's Ill. Ind. Zoo.* pl. 21.
Strix sinensis, *Latham. Index Orn.*
Strix orientalis, *Shaw. Gen. Zoo.* vii. p. 257.
Syrnium ocellatum, *Lesson. Rev. Zoo.* 1839, p. 289.
Strix jougou. *Catalogue of the Rivoli collection.*
1, 2. Adult males, India, from the Rivoli collection.
3. Adult female, India.
4, 5. Adults, India, from the Rivoli collection.
6. nearly adult, India, from the same.

13. SYRNIUM NIVICOLUM, Hodgson. *Jour. As. Soc. Bengal*, xiv. p. 185.
1. young female, Sumatra.

14. SYRNIUM WOODFORDII, (A. Smith.) *Ill. Zoo. S. Africa, Aves*, pl. 71.
Noctua Woodfordii, *A. Smith. S. Afr. Quar. Jour.* 1834.
1. Adult, Cape of Good Hope, from the Rivoli collection.

4. Genus NYCTALE, Brehm.

1. NYCTALE FUNEREA, (Linn.) *Gould's B. of Eur.* pl. 49.
Strix funerea, *Linn. Fauna Suecica*, p. 25, No. 75. *Syst. Nat.* i. p. 133.
Strix Tengmalmi, *Gmelin. Syst. Nat.* i. p. 291.
Strix dasypus, *Bechs. Orn. Tasch.* p. 57.
"Strix noctua, Tengmalm." *Nillson. Fau. Sue.* p. 66.
Nyctale pinetorum, abietum et planiceps, *Brehm. Vög. Deut.* i. p. 112, 113.
1, 2. Adults, Europe, from the Rivoli collection.
3. Adult, France. Presented by A. L. Heermann, M. D.

2. NYCTALE ACADICA, (Gm.) ***Aud. B. of Am.*** **pl. 199.**
Strix acadica, ***Gm. Syst. Nat.*** **i. p. 296.**
Strix acadiensis, ***Lath. Ind. Orn.*** **i. p. 65.**
"Strix passerina, Linn." *Wilson, Am. Orn.* iv. p. 66. pl. 34, fig. 1.
"Strix albifrons?" *Wilson, Am. Orn.* iv. p. 67.

1, 2. Adults, from the Rivoli collection.
3. Adult, near Chester, Penna., from Mr. Cassin's collection.
4. Adult, California, from Dr. Gambel's collection.

3. NYCTALE HARRISII, *Cassin. Proc. Acad. Nat. Sci. Philada.* Feb. 1849.

1. South America? from Mr. J. G. Bell's collection.

II. *Subfamily BUBONINÆ.*

1. Genus BUBO, Sibbald.

1. BUBO MAXIMUS, Sibb. *Gould's B. of Eur.* pl. 37. *Selby, Brit. Orn.* pl. 19.
Bubo maximus, *Sibbald. Scotia illustrata,* Pars ii. Lib. iii. p. 15.
Strix bubo, atheniensis, et scandiaca, *Linn. Syst. Nat.* i. p. 131, 132.
Bubo italicus, *Briss. Orn.* i. p. 482.
Bubo albus, *Daud. Traite* ii. p. 210?
Bubo europæus, *Lesson. Traite* i. p. 115.
Bubo germanicus et septentrionalis, *Brehm. Vög. Deut.* p. 119, 120.

1. Adult male, Europe, from the Rivoli collection.
2. Adult female, Europe, from the same.
3. Adult female, Switzerland, from the same.
4. Male, France. Presented by A. L. Heerman, M. D.

2. BUBO VIRGINIANUS, Briss. *Orn.* i. p. 484. *Wilson, Am. Orn.* pl. 50, f. 1.
Strix pythaules, *Bartram. Travels.* p. 289.
Bubo pinicola, *Vieill. Ois. de l'Am. Sept.* pl. 19. *Aud. B. of Am.* pl. 61.
Bubo ludovicianus, *Daud. Traité d'Or.* ii. p. 210.

1, 2. Adult, North America, from the Rivoli collection.
3. Adult female, New Jersey, from Mr. Cassin's collection.
4. Male, nearly adult, Pennsylvania, from the same.
5. Adult female, Moorestown, N. J. Presented by Edward Harris, Esq.
6. Adult female, New Jersey. Presented by Ralph Hammersly, M. D.

7. Adult female, Pennsylvania.
8. nearly adult.
9. very young, Pennsylvania. Presented by A. F. Mickle, M. D.

3. BUBO MAGELLANICUS, (Gm.) *Buffon, Pl. Enl.* 385.
Strix magellanicus, *Gmelin. Syst. Nat.* i. p. 286. (*var.* δ. *S. bubo.*)
Strix nacurutu, *Vieill. Nouv. Dict. d'Hist. Nat.* vii. p. 44.

1, 2. From the Rivoli collection.
3. Rio Grande, South America, from the same.
4. California, from Dr. Gambel's collection.
5. very old male, South America.

4. BUBO CRASSIROSTRIS, (Vieill.) *Temm. Pl. col.* 62.
Strix crassirostris, *Vieillot. Nouv. Dict. d'Hist. Nat.* vii. p. 44.
Strix macrorhyncha, *Temminck. Pl. col.* ii. p. (liv. 11.)

1, 2. Adults, South America, from the Rivoli collection.

5. BUBO CAPENSIS, Daud. *Traité d'Orn.* ii. p. 209. *A. Smith. Ill. Zoo. S. Afr. Aves,* pl. 70.

1. Adult, Cape of Good Hope, from the Rivoli collection.
2. South Africa, from the same.

6. BUBO MACULOSUS, (Vieill.) *Temm. Pl. col.* 50.
Strix maculosus, *Vieill. Nouv. Dict.* vii. p. 44.
Strix africana, *Temminck. Pl. col.* ii. p. (liv. 9.)

1. Adult male, Cape of Good Hope, from the Rivoli collection.
2. Adult female, Cape of Good Hope, from the same.
3, 4, 5. South Africa, from the same.
6. young, South Africa, from the same.

7. BUBO CINERASCENS, Guerin. *Rev. Zoo.* 1843, p. 321. *Ferret & Gal. Voy. Abyss. Ois.* pl. 2.

1. Adult, Fazogloa, Eastern Africa, from the Rivoli collection.
2, 3. Fazogloa, from the same.

8. BUBO ASCALAPHUS, (Savigny.) *Desc. de l'Egypte, Hist. Nat.* i. p. 110. *Ois.* pl. 3, f. 2.
Strix ascalaphus, *Savigny.*
Ascalaphia Savigni, *Geoffroy. Mem. du Mus.* 1830, p. *Gould, B. of Eur.* pl. 38.

1. Adult male, Egypt, from the Rivoli collection.
2. Adult, Morocco, from the same.

9. **BUBO BENGALENSIS**, (Franklin.) *Gould's Century of Birds*, pl. 3.
Otus bengalensis, *Franklin. Proc. Zoo. Soc. London*, 1831, p. 115.
Bubo ? cavearius, *Hodgson. Asiatic Researches*, xix. p. 169.

1, 2. India, from the Rivoli collection.
3. Adult male, India.
4. Adult female, India.
5. Adult male, India, from Capt. Boys' collection.

10. BUBO ORIENTALIS, (Horsf.) *Temm. Pl. col.* 174, 229.
Strix orientalis, *Horsfield. Trans. Linn. Soc. London*, xiii. p. 140.
Strix sumatrana, *Raffles. Trans. Linn. Soc. London*, xiii. p. 279.
Strix strepitans, *Temm. Pl. col.* ii. p. (liv. 30.)
Bubo nipalensis, *Hodgson. Asiatic Researches*, xix. p. 172.

1. Adult, Java, from the Rivoli collection.
2. young, Java.

11. BUBO COROMANDUS, (Lath.) *Gray, Ill. Ind. Zoo.* pl. 20.
Strix coromanda, *Latham. Ind. Orn.* i. p. 95. *Daud. Traite d'Orn.* ii. p. 215.
Urrua umbrata, *Blyth. Jour. As. Soc. Beng.* xiv. p. 180.

1. Adult, from the Rivoli collection.
2. Adult male, India.
3. Adult female, India.

12. BUBO LACTEUS, (Temm.) *Pl. col.* 4.
Strix lacteus, *Temm. Pl. col.* ii. p. (liv. 1.)

1, 2. Adults, Senegal, from the Rivoli collection.
3. Adult, Fazogloa, from the same.

13. BUBO PECTORALIS, (Jerdon.) ?

1. Adult ? Himalaya mountains.

2. Genus KETUPA, Lesson.

1. KETUPA CEYLONENSIS, (Gm.) *Temm. Pl. col.* 20.
Strix zeylonensis, *Gmelin. Syst. Nat.* i. p. 287.
Strix Hardwickii, *Gray. Ill. Ind. Zool.* pl. 31.
Strix Leschenaultii, *Temm. Pl. col.* ii. p. (liv. 4.)
Strix dumeticola, *Tickell. Jour. As. Soc. Beng.* ii. p. 571.
Cultrunguis nigripes, *Hodgson. Jour. As. Soc. Beng.* vi. p. 363.

1. Adult female, India, from the Rivoli collection.
2, 3. Adults, India, from the same.

2. KETUPA JAVANENSIS, Lesson. *Traite d'Orn.* i. p. 114. *Temm. Pl. col.* 74.
Strix ketupa, *Horsfield. Trans. Linn. Soc. London*, xiii. p. 141.

"Strix ceylonensis, Lath." *Temm. Pl. col.* ii. p. (liv. 13.) *et Less. Traité d'Orn.* i. p. 114.

1, 2. Adult, Java, from the Rivoli collection.
3. Adult, India. Presented by Gavin Watson, M. D.

3. KETUPA FLAVIPES, Hodgson.

1. Adult male, India, from Capt. Boys' collection.
2. Adult female, India, from the same.

3. Genus LOPHOSTRIX, Lesson.

1. LOPHOSTRIX CRISTATA, (Daud.) *Le Vaill. Ois. d'Af.* pl. 48.
Strix cristata, *Daudin. Traité d'Orn.* ii. p. 207.
Strix griseata, *Latham. Ind. Orn. Supp.*

1, 2. Adults, Guiana, from the Rivoli collection.
3. Adult, South America, from the same.
4. Adult, Cayenne. Presented by C. Hering, M. D.

4. Genus EPHIALTES, Keyserling & Blasius.

1. EPHIALTES SCOPS, (Linn.) *Selby's Brit. Orn.* pl. 22. *Gould, B. of Eur.* pl. 41.
Strix scops, *Linn. Syst. Nat.* i. p. 132.
Strix pulchella, *Pallas. Trav. Russia.*
Strix giu, *Scopoli. Annus. Hist. Nat.*
Strix zorca et carniolica, *Gm. Syst. Nat.* i. p. 289, 290.
"Scops Aldrovandi, Ray." *Selby.*
Scops europæus, *Lesson. Traité* i. p. 106.
Scops ephialtes, *Sav. Egypte* xxiii. p. 291.

1, 2. Adult females, France, from the Rivoli collection.
3. Adult female, Europe, from the same.
4, 5. younger, from the same.
6, 7. Scops pennata, *Hodgson?* India, from the Rivoli collection.

2. EPHIALTES SUNIA, (Hodg.) *Jerdon's Ill. Ind. Orn.* pl. 41.
Scops sunia, *Hodgson. As. Res.* xix. p. 175.

1, 2, 3. India, from the Rivoli collection.

3. EPHIALTES SENEGALENSIS, (Swains.)
Scops senegalensis, *Swainson. B. of W. Af.* (*Nat. Lib.*) i. p. 127.

1, 2. Senegal, from the Rivoli collection.
3. Adult, Western Africa, from Mr. Cassin's collection.
4, 5. Adult, Western Africa.
6, 7, 8. Scops capensis, A. Smith, South Africa, from the Rivoli collection.
9. the same, Cape of Good Hope. Presented by Gavin Watson, M. D.

4. **EPHIALTES LEMPIJI**, (Horsf.) *Temm. Pl. col.* 99?
Strix Lempiji, *Horsfield. Trans. Linn. Soc. Lond.* xiii. p. 140.
Scops lettia, *Hodgson. As. Res.* xix. p. 176?
Scops javanicus, *Less. Traité* i. p. 107?

1, 2. Adult males, India, from the Rivoli collection.
3, 4. Adult females, India, from the same.
5. Adult male, India, from Capt. Boys' collection.
6. Adult female, India, from the same.
7, 8. young, India, from the Rivoli collection.
9, 10. "Strix noctula, Reinw." *Temm. Pl. col.* 99. India, from the Rivoli collection.

5. **EPHIALTES LOPHOTES**, (Less.)?
Scops lophotes, Lesson. *Traité d'Orn.* i. p 107?

1. Adult, India? from the Rivoli collection.
2, 3, 4. younger.

6. **EPHIALTES SAGITTATUS**, Cassin. *Proc. Acad. Nat. Sci. Philada.* iv. p. 121, Dec. 1848.

1. Adult? India?
2. young, Malacca?

7. **EPHIALTES SEMITORQUES**, (Temm. & Schl.) *Fauna Japonica*, pl. 8.
Otus semitorques, *Temm. & Schl. Faun. Jap. Aves*, p. 25.

1. Adult, Japan, from the Rivoli collection.
2. Adult male, Japan.

8. **EPHIALTES LEUCOTIS**, (Temm.) *Pl. col.* 16.
Strix leucotis, *Temminck. Pl. col.* ii. p. (liv. 3.)

1, 2. Adult, Fazogloa, from the Rivoli collection.
3, 4. Adult, Senegal, from the same.

9. **EPHIALTES ASIO**, (Linn.) *Aud. B. of Am.* pl. 97. *Wilson, Am. Orn.* pl. 19, 42.
Strix asio, *Linn. Syst. Nat.* i. p. 132.
Strix nævia, *Gm. Syst. Nat.* i. p. 289.
Scops carolinensis, *Brisson. Orn.* i. p. 497.
"Strix albifrons?" *Bonaparte.* Obs.
"Bubo striatus? Vieill." *Bonaparte.* Obs.

1, 2. North America, from the Rivoli collection.
3. New Jersey. Presented by Ralph Hammersly, M. D.
4. Male, Pennsylvania. Presented by W. S. Zantzinger, M. D.
5. Female, Chester county, Penna. Presented by Samuel W. Woodhouse, M. D.
6. very young male, Chester county, Penna., from the same.

7. **Strix nævia, *Gm.* Pennsylvania, from Mr. Cassin's collection.**
8. the same, North America, from the Rivoli collection.
9. the same, female, near Philadelphia.
10. the same, female, Pennsylvania.

10. EPHIALTES CHOLIBA, (Vieill.) *Spix. Av. Bras. Aves*, pl. 9. *Des Murs, Pl. peint.* (*Icon. Orn.*) pl. 26.
Strix choliba, *Vieillot. Nouv. Dict.* vii. p. 39.
Strix crucigera et undulata, *Spix. Av. Bras.* pl. 9, 10.
Strix decussata, *Lichtenstein. Cat. Dup. Berl. Mus.* p. 59.
Scops portoricensis, *Lesson. Tr. d'Orn.* i. p. 107.
Strix tolchiquatli, *Gm. Syst. Nat.* i. p. 296? *Azara Voy.* iii. p. 126.

1, 2, 3, 4. Adult, South America, from the Rivoli collection.
5, 6. Brazil, from the same.
7. young, Cayenne.
8. young, South America.

11. EPHIALTES WATSONII, Cassin. *Proc. Acad. Nat. Sci. Philada.* iv. p. 123, (Dec. 1848.)

1. Rio Orinoco, South America, from the Rivoli collection.
2. South America.
3. Surinam. Presented by C. Hering, M. D.

12. EPHIALTES ATRICAPILLA, (Natt.) *Temm. Pl. col.* 145.
Strix atricapilla, *Natterer.* (*ubi?*) *Temm. Pl. col.* ii. p. (liv. 25.)

1. nearly adult, Mexico, from Mr. W. S. Pease's collection.

13. EPHIALTES NUDIPES, (Vieill.) *Ois. Am. Sept.* pl. 22?
Strix nudipes, Vieillot?

1, 2. Bogota, from the Rivoli collection.

III. *Subfamily NYCTEININÆ.*

1. Genus NYCTEA, Stephens.

1. NYCTEA NIVEA, (Daud.) *Aud. B. of Am.* pl. 121. *Selby, Brit. Orn.* pl. 23.
Strix nivea, *Daudin. Traité d'Orn.* ii. p. 190. *Faun. Franç. Verteb.* pl. 23.
Strix nyctea, *Linn. Syst. Nat.* i. p. 132. *Fau. Sue.* p. 25.
Strix candida, *Lath. Ind. Orn. Supp.*
Strix erminea, *Shaw. Gen. Zool.* vii. p. 251.
Nyctea erminea et cinerea, *Stephens.*
Strix wapacuthu, *Vieill. Fauna Bor. Am. Birds*, p. 99?
Strix arcticus, *Bartram. Trav.* p. 289.

1, 2. Europe? from the Rivoli collection.
3. Adult, New Jersey, from Mr. Cassin's collection.
4. younger. Presented by J. Trudeau, M. D.
5. Adult female, New Jersey.

IV. *Subfamily ATHENINÆ.*

1. Genus ATHENE, Boie.

1. ATHENE NOCTUA, (Retzius.) *Gould's B. of Eur.* pl. 48.
Strix noctua, *Retzius. Fauna Suecica*, p. 85.
"Strix passerina, Gm." *Temm. Man.* i. p. 93.
"Strix passerina, et accipitrina, Linn." *Meyer Tasch.* i. p. 81.
Strix nudipes, *Nillson. Orn. Suec.* p. 68, pl. 2.
Noctua glaux, *Savigny. Egypte.*

1, 2. Adult, Europe, from the Rivoli collection.
3. Adult female, Algiers, from the same.
4, 5. Adult, France.

2. ATHENE PASSERINA, (Linn.) *Gould's B. of Eur.* pl. 50.
Strix passerina, *Linn. Syst. Nat.* i. p. 133. *Faun. Suec.* p. 26.
Strix pusilla, *Daudin. Traité d'Orn.* ii. p. 205. *Le Vaill. Ois. d'Af.* pl. 46.
Strix pygmæa, *Bechstein. Nat. Deut.* ii. p. 978.
"Strix acadica, Linn." *Temm. Man.* i. p. 96.

1. Adult, Europe, from the Rivoli collection.

3. ATHENE PASSERINOIDES, (Temm.) *Pl. col.* 344. *Aud. B. of Am.* pl. 432.
Strix passerinoides, *Temm. Pl. col.* ii. p. (liv. 58.)

1. Adult? New Grenada, from the Rivoli collection.
2. Adult? Brazil, from the same.
3, 4, 5. South America, from the same.

4. ATHENE PUMILA, (Illig.) *Temm. Pl. col.* 39.
"Strix pumila, Illiger." *Temm. Pl. col.* ii. p. (liv. 7.)
Strix pumila, *Licht. Cat. Dup. Ber. Mus.* p. 60.
Strix ferox, *Vieill. Nour. Dict.* vii. p. 22.
Strix minutissima, *de Wied. Beitrage zur Nat. Bras.* iii. p. 242.

1, 2. South America, from the Rivoli collection.

5. ATHENE SIJU, (D'Orb.) *De la Sagra's Cuba, Ois.* pl. 3.
Noctua siju, *D'Orbigny. De la Sagra's Hist. de l'Ile de Cuba. Orn.* p. 33.

1. Adult, Cuba. Presented by Richard C. Taylor, Esq.

6. ATHENE FERRUGINEA, (de Wied.) *Temm. Pl. col.* 199.
Strix ferruginea, *de Wied. Beit. Nat Bras.* iii. p. 234.

Strix phalœnoides, *Daud. Tr. d'Orn.* ii. p. 206? *Vieill. Ois. d'Am. Sept.* pl. 15?
"Strix pumila, Illig.?" *de Wied.* (*vt supra.*)

1, 2, 3. Adult males, Brazil, from the Rivoli collection.
4, 5, 6. Adult females, Brazil, from the same.
7. Adult, Rio Negro, from Mr. Cassin's collection.
8, 9. younger, South America, from the Rivoli collection.
10. Female, Trinidad.
11. younger, South America. Presented by Gavin Watson, M. D.
12. S. ferruginea? Caraccas, from the Rivoli collection.

7. ATHENE NANA, (Vig.) *Gray & Mitch. Genera*, pl. 12.
Strix nana, *Vigors. Zoo. Jour.* iii. p. 426.

1. America, from the Rivoli collection.
1, 2. A. nana? Mexico, from M. Bruzin's collection.
1, 2, 3, 4. A. nana? South America.

8. ATHENE BRAMA, (*Temm.*) *Pl. col.* 68.
Strix brama, *Temm. Pl. col.* ii. p. (liv. 12.)
Noctua indica, *Franklin. Proc. Zoo. Soc. Lond.* 1831, p. 115.
Noctua tarayensis, *Hodgson. As. Res.* xix. p. 175.
Strix persica, *Vieill. Nouv. Dict.* vii. p. 26.?

1, 2, 3. Adult females, India, from the Rivoli collection.
4. Adult male, India. Presented by M. Burrough, M. D.
5. young, India, from the Rivoli collection.

9. ATHENE RADIATA, (Tickell.)
Strix radiata, *Tickell. Jour. As. Soc. Beng.* ii. p. 572.
Strix eyrthroptera, *Gould. Proc. Zoo. Soc. Lond.* 1837, p. 136.
Athene undulatus, *Blyth. Jour. As. Soc. Beng.* xi. p. 457.

1, 2. Adult females, Himalaya mountains, from the Rivoli collection.
3. Adult male, Himalaya mountains, from the same.
4, 5. younger, India.

10. ATHENE CUCULOIDES, (Vig.) *Gould's Century*, pl. 4.
Noctua cuculoides, *Vigors. Proc. Zool. Soc. Lond.* 1830, p. 8.

1. Adult male, India, from Capt. Boys' collection.
2. Adult female, India, from the same.
3. India, from the Rivoli collection.
4. A. cuculoides? India, from Capt. Boys' collection.

11. ATHENE CASTANEOPTERA, (Horsf.) *Temm. Pl. col.* 98.
Strix castaneoptera, Horsfield. *Trans. Linn. Soc. Lond.* xiii. p. 140.

1, 2, 3. Adults, Java, from the Rivoli collection.

12. ATHENE BRODIEI, (Burt.)
Noctua Brodiei, *Burton. Proc. Zoo. Soc. Lond.* 1835, p. 152.
Noctua tubiger, *Hodgson. As. Res.* xix. p. 175.

1. Adult male, India, from Capt. Boys' collection.
2. Adult female, India, from the same.
3. India.

13. ATHENE SCUTELLATA, (Raff.) *Temm. Pl. col.* 289.
Strix scutellata, *Raffles. Trans. Linn. Soc. Lond.* xiii. p. 280.
Strix hirsuta, *Temm. Pl. col.* ii. p. (liv. 49.)
Strix lugubris, *Tickell. Jour. As. Soc. Beng.* ii. p. 572.
Athene malaccensis, *Eyton. Ann. and Mag. Nat. Hist.* xvi. p. 228 ?

1, 2. Adults, India, from the Rivoli collection.
3. Adult, Sumatra, from the same.
4. younger, Ceylon, from the same.
5. Adult, India. Presented by M. Burrough, M. D.
6. Adult female, India.

14. ATHENE PERLATA, (Vieill.) *Le Vaill. Ois. d'Af.* pl. 284. *Temm. Pl. col.* 34.
Strix perlata, *Vieillot. Nouv. Dict.* vii. p. 26.
Strix occipitalis, *Temm. Pl. col.* ii. p. (liv. 4.)

1. Adult, Western Africa. Presented by Edward Harris, Esq.
2, 3, 4. Adults, South Africa, from the Rivoli collection.
5. younger, Cape of Good Hope, from the same.
6, 7. Adult, Senegal, from the same.
8. younger, Africa, from the same.
9. Female, Cape of Good Hope.

15. ATHENE CUNICULARIA, (Mol.) *Aud. B. of Am.* pl. 412. (*from S. A. specimens.*)
Strix cunicularia, *Molina. Sagg. Chili.*
Strix grallaria, *Temm. Pl. col.* ii. p. (liv. 25.) pl. 146 ?
Strix californica, *Aud. B. of Am.* pl. 412. (*name on plate.*)
Noctua coquimbana, *Brisson. Orn.* i. p. 155.

1, 2. Adult females? South America, from the Rivoli collection.
3. younger, Rio La Plata. Presented by W. S. W. Ruschenberger, M. D., U. S. Navy.
4. Female, Peru.
5. Strix grallaria, Temm. South America, from the Rivoli collection.

16. ATHENE HYPUGÆA, (Bonap.) *Bonaparte's Am. Orn.* i. pl. 7.
Strix hypugæa, *Bonaparte. Am. Orn.* i. p. 72.
Asthene socialis, *Gambel. Proc. Acad. Nat. Sci. Philada.* iii. p. 47.

1. Male, Columbia River. Presented by Edward Harris, Esq.
2. Adult male, Platte River. Presented by A. L. Heerman, M. D.
3. very young, Western North America. Deposited by Mr. E. M. Kern, and collected by him during Col. Fremont's Expedition of 1845.
4. Adult, Columbia River, from Mr. John G. Bell's collection.

17. ATHENE? STRENUA, Gould. *Proc. Zoo. Soc. Lond.* 1837, p. 142. *B. of Aust.* i. pl. 35.

1, 2. Adults, Australia, from the Rivoli collection.
3. New South Wales, from Mr. Gould's collection.

18. ATHENE? CONNIVENS, (Lath.) *Gould's B. of Aust.* i. pl. 34.
Falco connivens, *Latham. Ind. Orn. Supp.* p. 12.
Athene? fortis, *Gould. Proc. Zoo. Soc. Lond.* 1837, p. 141.

1, 2. Australia, from the Rivoli collection.
3. Adult male, Western Australia, from Mr. Gould's collection.
4. Adult female, Western Australia, from the same.
5. Male, New South Wales, from the same.
6. Female, New South Wales, from the same.

19. ATHENE BOOBOOK, (Lath.) *Gould's B. of Aust.* i. pl. 32.
Strix boobook, *Latham. Ind. Orn. Supp.*

1. Adult, Swan River, Australia, from the Rivoli collection.
2, 3. Males, Western Australia, from Mr. Gould's collection.
4. Female, do. from the same.

20. ATHENE MACULATA, (Vig. & Horsf.) *Gould's, B. of Aust.* i. p. 33.
Noctua maculata, *Vigors & Horsfield. Trans. Linn. Soc. Lond.* xv. p. 139.

1. Adult, Van Dieman's land, from the Rivoli collection.
2, 3. New Zealand, from the same.
4. Male, Van Dieman's land, from Mr. Gould's collection.
5. Female, Van Dieman's land, from the same.

21. ATHENE MARMORATA, Gould. *Proc. Zoo. Soc. Lond.* 1846, p. 18.

1. Male, Southern Australia, from Mr. Gould's collection.

22. ATHENE RUFA, Gould. *Proc. Zoo. Soc. Lond.* 1846, p. 18, *B. of Aust.* i. pl. 36.

1. Port Essington, Australia, from Mr. Gould's collection.

23. ATHENE MAUGEI, (Temm.) *Pl. col.* 46.
Strix Maugei, *Temm.* *Pl. col.* ii. p. (liv. 8.)

1. Adult male.

2. Genus CICCABA, Wagler.

1. CICCABA HUHULA, (Daud.) *Le Vaill. Ois. d'Af.* pl. 41.
Strix huhula, *Daudin. Tr. d'Orn.* ii. p. 190.
Strix lineata, *Shaw. Gen. Zoo.* vii. p. 280, pl. 36.
Strix albomarginata, *Spix. Av. Bras.* pl. 10 a.

1, 2. Adults, South America, from the Rivoli collection.
3. younger, South America, from the same.

2. CICCABA PERSPICILLATA, (Lath.) *Le Vaill. Ois. d'Af.* pl. 42, 44.
Strix perspicillata, *Latham. Ind. Orn.* i. p. 58. *Gen. Hist.* i. pl. 15.
Strix personata et torquata, *Daudin. Tr. d'Orn.* ii. p. 192, 193.
Strix superciliosa, *Shaw. Gen. Zool.* vii. p. 251, pl. 32.
Strix larvata, *Shaw. Nat. Misc.* pl. 801.

1. Adult, Surinam, from the Rivoli collection.
2. Adult, South America, from the same.
3. middle age, South America, from the same.
4. middle age, Surinam. Presented by C. Hering, M. D.
5. younger, South America, from the Rivoli collection.
6. very young, South America.

V. *Subfamily SURNINÆ.*

1. Genus SURNIA, Dumeril.

1. SURNIA ULULA, (Linn.) *Aud. B. of Am.* pl. 378. *Gould's B. of Eur.* pl. 45.
Strix ulula, *Linn. Faun. Suec.* p. 26. *Syst. Nat.* i. p. 133.
Strix uralensis et hudsonia, *Gm. Syst. Nat.* i. p. 295. *Buff. Pl. Enl.* 463.
"Strix funerea, Linn. Syst. Nat. i. p. 133." *Nillson, Faun. Suec.* p. 65, (*et al. Auct.*)
Strix canadensis et freti-hudsonia, *Briss. Orn.* i. p. 518, 520.
Strix nisoria, *Meyer Tasch.* i. p. 84.
Strix doliata, *Pallas. Zoog.* i. p. 316.
Strix arctica, *Sparrm. Mus. Car.*
Surnia borealis, *Less. Tr. d'Orn.* i. p. 100.

1, 2, 3, 4. Adults, Europe, from the Rivoli collection.
5. Adult male, Nova Scotia.
6. Adult female, Nova Scotia.

March 6th, 1849.

Dr. Patterson in the Chair.

Dr. Gambel read a continuation of his "Remarks on the Birds of Upper California," intended for publication in the Journal. Referred to Mr. Cassin, Dr. Wilson, and Dr. Townsend.

Dr. Gambel also read a paper intended for publication in the Journal, entitled, "Notes on the Pidgeons, with descriptions of new species," which was referred to Mr. Cassin, Dr. Wilson, and Mr. Harris.

Professor Agassiz made some remarks on the distinctions between the fossil Crocodiles of the green sand of New Jersey, described by Drs. Harlan and Morton, and characterized that of Dr. Harlan as a distinct genus under the proposed name of *Bottosaurus.*

March 13th, 1849.

Dr. Bridges in the Chair.

Dr. Leidy presented a communication from Professor Haldeman, intended for publication in the Proceedings, describing new species of *Cryptocephalus*, &c., in the collection of Dr. J. L. Le Conte. Referred to Drs. Zantzinger, Griffith, and Watson.

Dr. Keller read a memoir entitled "On Ciliary cells of some marine naked Mollusca, in embryo;" which was referred to a committee consisting of Drs. Leidy, Goddard, and Hallowell.

Professor Agassiz made some observations upon the *Crocodilus clavirostris* of Morton, and characterized it as a distinct genus under the proposed name of *Sphenosaurus.* He also referred to the remains of an immense fossil Chelonian, in the collection of the Academy, and found in the green sand of New Jersey. Being allied to the *Colossochelys* of India, Professor Agassiz proposed for it the name of *Atlantochelys Mortoni.*

Dr. Leidy made some remarks on the intimate structure of the so-called cartilages of the Cephalopoda, and pointed out their strong resemblance to bone.

March 27th, 1849.

Dr. Bridges in the Chair.

The Committee to whom was referred Professor Haldeman's descriptions of new species of *Cryptocephalus*, &c., reported in favour of publication in the Proceedings.

Cryptocephalinarum Boreali-americae diagnoses, cum speciebus novis musei lecontiani.

Auctore S. S. HALDEMAN.

CRYPTOCEPHALUS.

C. GUTTATUS. Laete rufus: capite flavo-maculato: pronoto subtiliter sparse punctulato, canaliculato; margine angusto. maculis 2 basal. flavis: el. nigris, profunde punctato-striatis, singulo maculis flavis 4-2-2-1 positis: pygidio punctato, apice utrinque macula flava. 2 lin.

C. SPARSUS. Rufus, capite pallido, muculis 3 rufis: pronoto margine antico lateralique lato, maculisque 2 basalibus pallidis: el. pallida, sutura guttisque paucis obscure rufis: ant. apice tarsisq fuscis. 3½ lin.

C. AULICUS. Rufus; pronoto valde convexo, punctulato; margine flavo, maculis 2 basal. confuse flavis: el. flava punctato-striata; vittarum 2 nigr. vestigiis. 3 lin.

C. SIMPLEX. Rufo-brunneus; pronoto subtiliter punctato, lateribus maculis 2 basalib. flavis; el. flavis, punctato striatis; sutura, epipleuris, punctoque humerali nigerrimis: antennis pedibusq laete rufis. 2¼ lin.

C. PUMILUS. Supra flavescens, pronoto sparse minus subtiliter punctato, macula discoidali rufa: elytra profunde punctato-striatis: subtus saturate rufus, ped. pallidioribus. 1 lin.

C. LINEOLATUS. Saturate rufus, pronoto punctato: lateribus, maculis 2 basal. flavis: el. profunde punctato-striatis, vittis 2 flavis, apice convunctis, exteriori irregulari. 1½ lin.

C. VITATUS. Rufus, supra flavus; pronoto punctato, macula rotunda medio, vittaq utrinq submarginali brunneis: el. punctato-striatis; sutura, vitta lata versus marginem, alteraq inter media abbreviata atro-brunneis. 2 lin.

C. GIBBICOLLIS. Habitu omnino C. VENUSTI, at major: pronot. gibbosum, vix punctulatum, limbo semicirculari. Long. 3, lat. 2 lin.

C. INSERTUS. Pallide rufus; pronot. polito, punctulato, apice lateribusq margine angusto flavo, basi vix maculato: el. profunde seriatim punctatis; margine angusto, vittisq 2 latis confluentibus confusis nigerrimis; tarsis nigris: antennis apice fuscis. 2 l.

C. ALBICANS. Laete rufus: pronoto obsolete punctulato, apice, lateribus, maculisq 2 basal. obsolete flavis: el. seriatim punctatis; sutura, vittisq 2 obscure brunneis vel nigris. tarsis fuscis. 2¾ lin.

C. AMATUS. Supra flavus: pronoto laterib. obsolete punctulato; vittis 4 laete rufis: el. profunde seriatim punctatis seriebus perporia approximatis, interstitiis alternatim nigricantibus; subtus niger, ped. rufis, genubis flavis. 1¾ lin.

C. FULVIPENNIS. Niger: ant. breviusculis, palpisq rufus: pronoto punctulato: el. profunde seriatim punctatis, aurantiacis: pygydio punctato. 2 lin.

C. DISTINCTUS. Niger, nitidus: capite punctato, ant. basi fusco: pronoto convexo, obsolete sparsim punctulato: el. seriatim punctatis, fascia subbasali humeros attingente, maculoq apicali flavis: pygidio carinato, punctato. 2 lin.

C. LEVIS. Violaceo-niger, nitidus: ore antennisq pallide rufis: pronoto laevigato: el. seriatim punctatis, punctis minutis. ¾ lin.

C. PUNCTATUS. Nigricans, supra flavus, brunneo variegatus, punctis impressis brunneis: antennis fuscis, articulorum basi flavescente: pronoto basi tenuiter nigro: pygidio punctulato, apice flavo; femoribus flavo-annulatis. 1 lin.

C. RUGICOLLIS. Rufus, elongatulus: fronte scabro-punctata, orbitis flavis: pronoto longitudinaliter ruguloso, lateribus grosse punctatis, flavescentibus: elytris flavis, indistincte rufo-nebulosis, punctato-striatis, punctis rufis, approximatis. 2 lin.

PACHYBRACHIS.

P. CARBONARIUS. Niger, disperse punctulatus: labro et antennarum basi brunneis: pronoto dense et distincte punctato, punctis parvis: elytris grosse punctatis, externe irregulariter punctato-striatis. Long. 1¼ lin.

P. MOROSUS. Niger, confertim scabro-punctatus; subtus punctatus, albido-sericeus: fronte plana: humeris prominulis, politis: pygidio confertim punctulato. 2 lin.

P. INFAUSTUS. Niger, rugose punctatus: capite punctato; labro, maculisque indistinctis flavis: pronoto confertim punctato, punctis parvis: elytris irregulariter punctatis; lineolis elevatis; maculis parvis flavis: femoribus intermedi macula flava apicali. 1½ l.

P. SOBRINUS. Niger, punctatus: prothorace disperse punctato, flavo, brunneo-variegato: capite, pedibus, pygidio, abdominis marginibusque flavis: elytris vix seriatim punctatis, flavo lineolatis. 1¼ l.

P. MOLLIS. Niger, punctatus: capite pedibusque flavis: pronoto flavo, maculis 3 nigris: elytris seriatim punctatis, fascia subbasali apiceque flavis: abdomine flavo-marginato. 1¼ lin.

MONACHUS.

M. ATER. Niger, nitidus: labro et antennarum basi flavescentibus: pronoto laevi, cyanescente: elytris indistincte seriatim punctulatis. 1¼ lin.

M. AFFINIS. Cyaneus, laevis: labro, clypeo, antennis, pedibusque, dilute rufis: elytris distincte seriatim punctulatis. 1 lin.

M. AURITUS. Cyaneus, nitidus: labro, clypeo, fronte, antennis, pedibus, prosterno, pronoti lateribusque *flavis*: pronoto impunctato: elytris distincte seriatim punctulatis. Long. ¾ lin.

The Committee on Dr. Gambel's "Remarks on the Birds of California," reported in favour of publication in the Journal.

The Committee on Dr. Gambel's "Notes on the Columbidæ in the collection of the Academy," reported in favour of publication in the Journal.

The monthly Report of the Corresponding Secretary was read and adopted.

On motion it was *Resolved*, That a new edition of the By-Laws of the Academy be printed, and that a Committee be appointed to superintend the same. Committee, Dr. Zantzinger, Mr. Vaux, and Dr. Bridges.

April 3d, 1849.

Mr. Phillips in the Chair.

Letters were read:—

From Dr. Thomas Horsfield, dated Library of East India House, London, March 8, 1849, notifying the Academy of the transmission, by order of the Directors of the East India Company's Museum, of plaster casts of Himalaya fossils, to replace those which had been broken in a former transportation; together with a list of the same.

From the Secretary of the same Company, dated February 16, 1849, to the same effect.

From the Assistant Secretary of the Directors of the British Museum, dated February, 22, 1849, returning acknowledgments to the Academy for the donation of a cast of one side of the inferior maxilla of Mylodon.

From the Geological Society of London, dated Somerset House, November 2, 1848, acknowledging the receipt of Part 2, Vol. 1, New Series of the Journal of the Academy, and of other publications.

From Henry W. Ravenel, Esq., of Black Oak, South Carolina, dated March 14, 1849, acknowledging the receipt of his notice of election as a Correspondent.

From Dr. Mydleton Michel, dated Charleston, S. C., March 20, 1849, also acknowledging the receipt of his notice of election as a Correspondent.

April 10th, 1849.

Professor Haldeman in the Chair.

A letter was read from James E. Fitzgerald, Assistant Secretary of Directors of British Museum, dated March 2, 1849, acknowledging the receipt of the Proceedings of the Academy for July to October, 1848.

A communication was read from Mr. E. George Squier, U. S. Chargé d'Affaires to Central America, expressing his desire to attach to his suite, on behalf of the Academy, a person competent to prosecute scientific researches in that country, especially in Geology, Botany, Zoology, &c.; and offering to such person every facility that his official position could command.

Professor Meigs read a memoir entitled "Observations on the reproductive organs and on the fœtus of the Delphinus Nesarnak." Referred to Drs. Leidy, Hallowell, and Griffith.

On motion the Corresponding Secretary was requested to make some inquiries of Mr. Squier, respecting the character of the position which would be occupied by the person proposed to be attached to his mission.

April 24th, 1849.

Mr. Phillips in the Chair.

The Committee to whom was referred the following communication from Dr. Keller, reported in favour of publication in the Proceedings.

On Ciliary cells in some marine naked Mollusca, in embryo.

By Wilhelm Keller, M. D.

In following the development of the ova of different species of Eolis, of the Acteon viridis, and of a little mollusk lately found and described by Mr. Agassiz under the name of Cantops Harvardianus, I often noticed in the surrounding transparent zona, which is falsely considered by authors generally as the white of the egg, one or two, seldom more, small moving bodies, which were first observed by Professor Volkmann,* who considered and described them as animals.

The circumstance that the motion is more a rythmic jumping, not very unlike to that of the moving corpuscles of the sperm, and the observation that it always occurs in the same degree of perfection, and only in those eggs in which the cilia at the cephalic end of the embryo have attained their highest development, caused me to think that those moving bodies might be nothing more than detached ciliary cells of the embryo itself, an opinion which I afterwards found advanced in a note by Professor Charles Vogt,† in his treatise on the development of the Acteon viridis. To solve this question seemed to me important enough to try the experiment of isolating some of the cells from the animal.

Before I describe the cell itself I will mention its development, and connection with the animal. So soon as the eggs of the above named animals are laid, they begin immediately the process of division, and when this process has so far advanced that the yolk globules are so small that they seem to have disappeared, ciliary motion appears at the edges of the yolk. The embryo, so soon as the cilia are formed, rotates sometimes to the right side, sometimes to the left, and changes the direction so soon as there is the least impediment opposed to it. The rapidity of the motion varies; I counted seventy rotations in a minute. The next change in the embryo is real cell formation. There appear cells towards the inferior end, which I consider as liver cells; and which are mother cells, contrary to Professor Vogt's opinion; two cells in the head, the ear cells containing three cells, and a ring of cells provided with long cilia around the head. In the mean time the other cilia are disappearing. The embryo is now no more unconsciously rotating, but the whole body is stretched out, and the only motion observed in it is performed by the long cilia, which are seen folded together like a fan, or playing like the wheel of rotiferous animals. This motion changes very often and seems to be entirely under the control of the animal itself, notwithstanding the animal does not show any formation of nerves, as it only consists of cells at this period, and there is no fibrous structure to be perceived, so that the embryo of these higher animals shows, at least apparently, voluntary motion without a nervous system like the lowest orders of the animal kingdom. By some pressure the ring formed of the mentioned cells appears more distinctly, and by crushing the animal with some care the cells may be isolated, and they will be seen to be entirely identical with the animals described by Volkmann under the name of Cosmella hydrachnoides. They are round cells with one or two nuclei, having always four very long cilia, which are united in pairs and then fuse together in the cell wall. The motion is a slow rythmical jumping, produced by alternating contraction and expansion of the cell by which the cilia, if not called otherwise for distinction, are made to act like the motion of a whip. But this power of the cells producing the movement, must cause the latter to be considered as something entirely different from ciliary motion, and, in fact, it appears as if a great many different motions were understood under this term, the real nature of which have not yet been studied.

---

* "Versuch einer Monographie des Tergipes Edwardsii," read before the Academy of St Petersburg, Feb. 9th, 1844. The author calls these cells Cosmella hydrachnoides, and considers them as an instance of spontaneous generation.

† Recherches sur l'Embryogenie des Mollusques Gasteropodes par M. C. Vogt, presentees a l'Academie des Sciences le 2 Mar. 1846.

If we are led sometimes by first observations to the theory of generatio æquivoca, as the facts here presented have done, repeated and more close observation brings us from this extraordinary theory always back to the old law, Omne vivum ex ovo. The supporters of the generatio æquivoca have certainly lost in the separation of these cells from the number of animals, as much as by the discovery that the so-called spermatozoa are but the changed nuclei of cells, formed in the male genital organs of animals.

As regards the particular movements in organic formations independent of the nervous system, and even for a certain time independent of the mother animal to which they belong originally, we have, at the present time, not less than four.

1. The motion of corpuscles of sperm. Transformed nuclei of cells.

2. Ciliary motion, roundish or cylindrical, perfect cells of epithelium on free surfaces, with a number of cilia, which are in constant motion independent of the cell.

3. The Chromatophores of the Sepia. They cover the animal and produce by their constant contraction and expansion, the beautiful colours which it presents. For which reason, Rudolph Wagner, who first observed this interesting phenomenon, called them Chromatophores?

4. The fourth is a simple cell with four long hair-like appendages, as I have described them. Here the cells contract and the appendages are by this property set in motion. This form has only been observed till now in embryos, whilst the first one belongs only to full grown animals, the ciliary motion is to be found at any age, and the chromatophores only after the animal, which is provided with them, has come to its last type.

The Committee on Prof. Meigs' Memoir, entitled "Observations on the reproductive organs, and on the fœtus of the Delphinus Nesarnak," reported in favour of publication in the Journal of the Academy.

The Monthly Report of the Corresponding Secretary was read and adopted.

Dr. Leidy having stated that Prof. Agassiz was very desirous of having a drawing and engraving made in Boston of the skull of a Manatus, in the cabinet of the Academy, on motion of Dr. Elwyn, Art. 1, Chap. viii. of the By-Laws was suspended for one month, in order to comply with the request of Professor Agassiz.

ELECTION.

Thomas Pennant Barton, Esq., of Philadelphia, was elected a *Member* of the Academy.

DONATIONS TO MUSEUM,

In March and April, 1849.

March 6th.

Four specimens of native Copper from Lake Superior. Presented by Mr. W. L. Newbold.

The "Des Murs" collection of Bird's eggs, containing 3449 specimens, comprising 1281 species, 1011 of which are named. Also the Gould collection of Australian Birds eggs, containing 976 specimens, 295 species of which are named and 8 unnamed. Deposited by Dr. Wilson.

March 13th.

Stellate mass of Sulphuret of Iron in Lias, from England. Presented by Dr. Wilson.

Twenty-five minerals from Hungary. Presented by Mr. Theodore F. Moss.

Two eggs of Struthio camelus, from Algoa Bay, Africa. Presented by Mr. Jno. Watson through Dr. G. Watson.

April 3d.

Thallasseus regius, Gamb.; T. acuflavida; Sternula frenata, Gamb. Presented by Dr. Heerman.

Xema Bonapartii; Callipepla elegans, male and female, (C. Douglassi;) Podiceps Californicus; P. Dominicus; Fringilla Gambelii; Turdus olivaceus, 2 specimens; T. minor, 4 specimens; T. Wilsonii; and a bird from the Marquesas Islands. Presented by Dr. Gambel.

Bulimus Laurentii; os penis of Meles Labradorica; Sertularia, 3 species; from California. From the same.

Actinia marginata, from Newport, R. I. From Miss E. C. Morris.

Thirty-four specimens of Shells of the genera Turbo, Haliotis, Trochus, Conus, Patella, Fusus, Buccinum, Triton, from Algoa Bay. Presented by Mr. J. Watson through Dr. Watson.

Six casts in plaster of portions of the Maxillæ and teeth of Basilosaurus cetoides. In exchange from Dr. J. C. Warren, of Boston, through Dr. Wilson.

The following were received for exchange from the Australian Museum, through Dr. Charles Nicholson, of Sydney, N. S. W., viz:—

Thirty-three specimens of Birds of the genera, Aquila, Jeracidea, Corvus, Strepera, Struthidea, Oreica, Chlamydera, Pomatorhinus, Ardea, Sericulus, Platycercus, Psephotus, Pezoporus, Trichoglossus, Tropidorhynchus, Acanthogenys, Ptilotis, Meliphaga, Malurus, Pardalotus, Poephila, Amadina, Fringilla, Geopelia, Columba, Vanellus, Hiaticula, and Podiceps. Two Reptilia, viz., Cyclodus flavigularis, Wagler, and Gramatophora ———; 328 shells, viz., 137 fresh water and terrestrial, and 148 marine, from Australia, 10 do. New Zealand, and 36 do. from South Sea Islands; 150 Australian Insects, and two crania of Australian aborigines, male and female, from Moreton Bay.

April 10th.

Four teeth and a vertebra of a Carcharodon, 19 other teeth of Squalidæ, 3 vertebræ of fish, portion of beak of Coelorhynchus ?, portions of palatine teeth of two species of Myliobates, large and perfect specimen of Exogyra costata, cast of chamber of a Nautilus ?, 2 specimens of Mesodesma, 1 Ovula, 3 Isocardium, 2 Venus, 8 Teredo, 4 Arca, 1 Cucullæa, and 33 other shells; 3 Belemnites, and a fine specimen of Phosphate of Iron; 1 Scalaria, 1 Salenia, tooth of Equus Americanus, and fragments of fossil wood, all from Burlington county, N. J. Presented by Dr. Charles T. Budd.

Mounted specimen of Ornithorynchus paradoxus. Presented by Captain W. Michæl through Dr. Ruschenberger, U. S. N.

Eleven serpents, of the genera Hydrophis, (from the Canton River,) Coluber, Dendrophis, and Bungaris; also a Gecko from Anger, Java. Presented by Dr. Ruschenberger.

Skin of Mustela erminea. From the Rev. Mr. McFarland.

Muscicapa Cooperi. From Mr. S. Ashmead.

Spinelle from Monroe, N. Y., Zircon from Rossie, N. Y., Pyrope from New York. From Mr. W. S. Vaux.

April 17*th*.

Triton dorsalis, numerous specimens: Salamandra erythronota, S. symmetrica, and Coluber vernalis, from Catskill, N. Y. Presented by Mr. S. Ashmead.

Coluber vernalis. From Dr. Watson.

Cyprinus auratus, from Fairmount Dam, large and fine specimen. From Mr. J. Dundas.

A fine slab of flexible sandstone, 15 by 30 inches, mounted, from England. Presented by Dr. Wilson.

DONATIONS TO LIBRARY,

IN MARCH AND APRIL, 1849.

March 6*th*.

Denkschriften der Allgemeinen, Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Vol. 1. Nos. 1 and 2. 4to. From Professor Agassiz.

Neue denkschriften der Allgem. Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Vols. 1—9. 4to. From the same.

Mémoires de la Société des Sciences Naturelles de Neuchatel. Vols 2 and 3. 4to. From the same.

Herbarium diluvianum collectum a Johanne Jac. Scheuchezo, M. D. Folio. From Prof. Frazer.

Ninth Geological Report of the State of Tennessee. By Gerard Troost, M. D. From the author.

Plantæ Findlerianæ Novi-Mexicanæ: an account of a collection of plants made chiefly in the vicinity of Santa Fé, by Aug. Findler. By Asa Gray, M. D. 4to. From the author.

Hierozoicon, sive bipertitum opus de animalibus S. Scripturæ, auctore Samuele Bocharto. Folio, 1675. Deposited by Dr. Griffith.

Report of the select committee on the memorial of William T. G. Morton, asking compensation for the discovery of the anæsthetic property of Sulphuric Ether. From the author.

March 13*th*.

Dr. Wilson deposited the following:

Voyage dans l'Amerique Meridionale, exécuté dans les annees 1826, '33: par M. Alcide D'Orbigny. 9 vols. 4to.

Crustacés de la Mediterranée et de son littoral: par Polydore Roux. 9 Livs. 4to.

Exploration Scientifique de L'Algérie pendant les anneés 1840, '41 et '42; Articulata, Nos. 19—24; Botany, Nos. 7—11; Mollusca, Nos. 15—22; Geology, No. 1. 4to.

Traité élémentaire de Conchyliologie; par G. P. Deshayes. No. 9. Vol. 1. 8vo.

Manuel de Mammalogie; Par. R. P. Lesson. 12mo.

Histoire Naturelle des principales productions de l'Europe Meridionale, &c. Par A. Risso. 5 vols. 8vo.

Voyage en Sardaigne: par le Col. A. D. la Marmora. 2d edition. 2 vols. 8vo. and Atlas folio.

Expédition scientifique de Morée. Par M. Bory de St. Vincent. 4 vols. 4to. and Atlas folio.

La Ménagerie du Muséum National d'histoire naturelle. Par MM. Lacépède et Cuvier. Folio.

The London Athenæum for January, 1849.

March 20th.

Reliquiæ conservatæ from the primitive materials of our present globe, with popular descriptions of the prominent characters of some remarkable fossil Encrinites. By George Cumberland. 8vo. From Miss Elizabeth C. Morris.

Notice sur la formation Keupériénne dans le Jura Salinois; par Jules Marcou. From the author.

Calcutta Journal of Natural History, conducted by John McClelland. No. 8. January, 1842. From the Editor.

Reports and abstracts of the proceedings of a Committee for investigating the coal and mineral resources of India, to May, 1841. Folio. From the same.

April 3d.

American Journal of Science and Arts. 2d series. No. 20. From the Editors.

Index Molluscorum Grœnlandiæ: auctore H. P. C. Müller. From Mrs. L. W. Say.

Das Thierreich, von D. L. F. Froriep. Part 5, Mollusca. 12mo. From the same.

Enumeratio Molluscorum Regni Siciliæ. Auctore R. A. Philippi. Vol. 2. 4to.

Verhandlungen der Russich-Kaiserlichen Mineralog. Gesellschaft zu St. Petersburg, 1847. 8vo. From the Society through C. Cramer, Esq.

Constitution and By Laws of the National Institute, 1849. From Professor Johnson.

Dr. Wilson deposited the following:

Contributions to Ornithology, for 1848. By Sir William Jardine. Part 3.

List of specimens of Dipterous insects in the collection of the British Museum. Part 1. 12mo.

De Linnæaceis, seu de Gasteropodis pulmonatis quæ nostris in aquis vivent. Scripsit F. H. Trochel, Ph. D. 8vo.

Kupfertafeln zur Naturgeschichte der Vögel, von F. H. Von Kittlitz. Nos. 1, 2, 3. 8vo.

The Zoological Miscellany. By John E. Gray. pp. 1—48. 8vo.

Quarterly Journal of the Geological Society. No. 17.

Phycologia Britannica. By William H. Harvey, M. D. Part 38.

Annals and Magazine of Natural History. Vol. 3. 2d series. No. 14.

Conchologia iconica. By Lovell Reeve. Part 71. 4to.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 23. 4to.

The genera of Diurnal Lepidoptera. By Edward Doubleday. Part 25. 4to.

Illustrations of the Birds of Jamaica. By P. H. Gosse. Part 11. 8vo.

Musæum Senckenbergianum. Vol 3. No. 3, and Supplement to Vol. 1. 4to.

Narrative of a Journey in the interior of China 1816–'17. By Clarke Abel. 4to.

The Voyage of Governor Philip to Botany Bay. 4to.

An expedition of discovery into the interior of Africa. By Sir J. E. Alexander. 2 vols. 8vo.

A companion to the London Museum and Pantherion. By W. Bullock. 15th edition. 8vo.

Reise um die Erde dursch Nord Asien und die beiden Oceane in 1828, '29, '30, ausgefuhrt von Adolph Erman. 2 vols. 8vo.

The following were presented by Dr. Wilson:

Manuel d'Ornithologie. Par C. J. Temminck. 2d edition. Part 3.

The Animal Kingdom. By the Baron Cuvier, with additions by E. Griffith. Vols. 9, 10, 12, 13, 14, 15, and Index 1 vol. 8vo.

Journal of the Asiatic Society of Bengal. Nos. 81, 82, 83.

Dr. William Gambel presented the following works:

Genera et species plantarum vocabulis characteristicis definita, (De Wolf.) 8vo.

Flora Americæ Septentrionalis. By Frederick Pursh. 2 vols. 8vo. Second edition.

Summa Plantarum quæ hactenus innotuerunt methodo Linnæana per genera et species descripta, &c., à Fulgentio Vitman. 7 vols. 8vo.

Flore Française, par MM. de Lamarck et de Candolle. 3d edition. 4 vols. 8vo.

Richardi Relhan Flora Cantabrigiensis. 3d edition. 8vo.

April 10th.

Index Molluscorum præsentis ævi Musei Principis Christiani Frederici. Auctore H. Beck. From Mrs. L. W. Say.

Observations on the genus Unio. By Isaac Lea. Vol. 4. 4to. From the author.

On the intimate structure and history of the articular cartilages. By Joseph Leidy, M. D. From the author.

Sylva Sylvarum, or a natural history in ten centuries: written by the right Hon. Francis Lord Verulam; published after the author's death by W. Rawley, D. D. 9th edition. Folio. Deposited by Dr. Griffith.

Adam in Eden, or Nature's Paradise. By William Coles. Folio. From the same.

Flora dietetica. By Charles Bryant. 8vo. From the same.

The Companion for the Orchard. By Henry Phillips; new edition. 8vo. From the same.

Dr. Wilson deposited the following:—

Isis von Oken. Nos. 6 and 7, for 1848. No. 9, for 1849.

Revue Zoologique. No. 10 for 1848.

Comptes Rendus. Tome 27, Nos. 21—26; Tome 28, Nos. 1, 2, 3.

The London Athenæum. February, 1849.

Reise nach Brasilien in den Jahren 1815 bis 1817; von Maximilian Prinz zu Wied-Neuwied. 2 vols. 4to, and Atlas folio.

Voyage autour du Monde sur la Coquille dans les an: 1822—'25. Botanique, tome 1; Historique, tome 1; Hydrographie et Physique, tome 1. 4to.

Anatomie de l'Homme. Par Jules Cloquet. 10 vols. Folio.

Sur les functions du cerveau et sur celles de chacune de ses parties. Par F. T. Gall. 6 vols. 8vo.

Eléméns d'Anatomie Générale; par P. A. Béclard. 8vo.

Experiences sur le systéme nerveux, par P. Flourens. 8vo.

Recherches experimentales sur les proprietes et les functions du systéme nerveux dans les animaux vértébres. Par. P. Flourens. 8vo.

De la Physiologie du systéme nerveux, et specialement du cerveau. Par M. Georget. 2 vols. 8vo.

Traité des Membranes; Par Xavier Bichat; nouv. edition par M. Magendie. 8vo.

Recherches Physiologiques sur la vie et sur la mort. Par X. Bichat; nouv. ed. par M. Magendie. 8vo.

Traité d'Anatomie descriptive; par X. Bichat. 5 vols. 8vo.

Anatomie générale, appliquee a la Physiologie et à la Medecine. Par X. Bichat.

Essays on the Anatomy and Physiology of expression. By Charles Bell. 2d edition. 4to.

A short description of the human muscles. By John Innes. 12mo.

A compendium of the Anatomy, Physiology, and Pathology of the Horse. By B. W. Burke. 12mo.

Manual of the Physiology of Man. By P. Huten. Translated from the French. By Joseph Togno. 12mo.

Engravings of the arteries, illustrating the anatomy of the human body. By Charles Bell. 8vo.

A system of Anatomy and Physiology, with the comparative anatomy of animals. New edition. 3 vols. 8vo.

Narrative of the U. S. Exploring Expedition. By Charles Wilks, U. S. N. 6 vols. Imperial 8vo.

The wonders of Geology. By G. A. Mantell, L. L. D. 2 vols. 12mo.

A Dictionary of Archæic and Provincial words, &c., from the 14th century. By James Halliwell. 2 vols. 8vo.

May 15th, 1849.

Vice President MORTON in the Chair.

Dr. Leidy read "Some remarks on the fragments of the *Tapirus Americanus fossilis*, deposited in the collection of the Academy by the late Dr. William M. Carpenter, of New Orleans." Referred to a committee consisting of Drs. Hallowell, Morton, and Keller.

May 22d.

Mr. ASHMEAD in the Chair.

A letter was read from the Edinburgh Geological Society, dated Leith, April 20th, 1849, acknowledging the receipt of recent numbers of the publications of the Academy.

Dr. Leidy read a paper by Prof. Haldeman, intended for publication in the Journal, describing new species of Coleoptera of the family Cryptocephalinæ; an abstract of which paper was published in the number of the Proceedings for March and April, 1849. Referred to the former committee, viz., Drs. Zantzinger, Griffith, and Watson.

May 27th.

Dr. BRIDGES in the Chair.

The Committee to whom was referred Prof. Haldeman's paper, read at last meeting, reported in favor of publication in the Journal.

The Committee appointed to superintend the printing of a new edition of the By-Laws of the Academy, reported that 250 copies had been printed, and were ready for distribution.

The resignation of Dr. William Gambel as recording Secretary, and as a member of the Publication Committee, was read, Dr. Gambel having left Philadelphia for California, where he proposes remaining for one or two years. On motion the same was accepted, and the election to supply the vacancies deferred until the next meeting for business.

ELECTION.

Bernard Henry, M. D., U. S. N., and Henry Belknap, Esq., were elected *Members* of the Academy.

June 5th.

Vice President MORTON in the Chair.

A letter was read from the Lyceum of Natural History of New York, dated April 24th, 1849, acknowledging the receipt of late numbers of the Proceedings.

The Chairman announced the receipt of a letter from Dr. Gibbes, of

Charleston, S. C., mentioning the discovery of a large quantity of Mammalian remains on the banks of Ashley river in that State, comprising numerous extinct genera.

June 12th.

Dr. BRIDGES in the Chair.

Dr. Keller exhibited a calculus of considerable size, taken from the bladder of a whale. He stated that calculi were frequently found in this animal, and occasionally in large numbers. Dr. Keller promised a full analysis of the present and other specimens of calculi in his possession, to be laid before the Society at a future meeting.

A communication was read from the Secretary of the American Philosophical Society, acknowledging the receipt of the last number of the Proceedings of the Academy.

June 26th.

Vice President MORTON in the Chair.

The Committee to whom was referred Dr. Leidy's remarks on the fragments of the fossil Tapir, deposited in the collection of the Academy by the late Dr. Carpenter, of New Orleans, reported in favor of publication in the Proceedings.

Tapirus Americanus fossilis.

BY JOSEPH LEIDY, M. D.

There are three of these fragments; one of them, being the crown of the fourth, left, permanent premolar of the inferior maxilla, was found near Opelousas, Louisiana, and was described by Dr. Carpenter, in Silliman's Journal,* so early as the year 1842. It does not differ from the same tooth in the recent Tapirus Americanus. The other two fragments, consisting of the left half of an inferior maxillary, and the posterior portion of the left superior maxilla, were found on the banks of the Brasos river, near San Fillipe, Texas, and were described by Dr. C., in Silliman's Journal,† in the year 1846.

The two fragments did not belong to the same individual, as Dr. C. supposed, from their having been "found within a few feet of each other." The superior fragment belonged to an older individual than the inferior one, as is indicated by the condition of the teeth. They also differ in the character of their fossilization, which would make one think they could hardly have been found so near together. The superior fragment has a white chalky aspect, is soft, rather friable, and is readily cut with a pen-knife; whilst the inferior fragment is hard, compact, with a brown polished surface, and does not so readily yield to the edge of the knife.

---

* Am. Jour. of Sci. and Arts. New series, Vol. 1, No. 2, p. 247.

† Vol. xliii., p. 390.

The superior fragment contains the three true molars and the last premolar. The seventh, or most posterior molar, is fully protruded and well developed, and the summits of its transverse eminences are worn sharp by trituration on their anterior surface. The penultimate molar has the enamel of its transverse eminences worn through, leaving two transverse irregularly outlined surfaces of exposed dentine. The antepenultimate molar, as usual in accordance with its order of development, is smaller, and more worn than the premolar preceding it. Its two transverse eminences are worn to their base, and the dentinal surfaces of each communicate by a narrow isthmus. The posterior premolar is but a little more worn than the penultimate molar. In comparing these teeth with those of two adult crania, of the recent Tapirus Américanus, in the Academy's collection, I find that although they almost correspond in their antero-posterior measurement, yet transversely they are somewhat larger, as may be observed by the following table:

Tapirus Americanus fossilis.

Molars.	Greatest transverse diameter.	Antero-posterior diameter
7th	1.15	1.1
6th	1.2	1.
5th	1.1	.9
4th	1.1	.8
Recent T. Americanus, adult.		
7th	1.	.9
6th	1.1	1.
5th	.95	.85
4th	.95	.85

The malar process of the fossil fragment is considerably more elevated above the margin of the alveoli than in the recent specimens; thus in the former, from the margin of enamel on the neck of the penultimate molar to the malar process at its posterior part where it enters into the composition of the orbito-temporal fossa, it measures 1.3 in., whilst in the latter, from corresponding points, it measures only .65 in. In the former also, the process curves upwards and outwards, whilst in the latter it forms a curve outwards, moderately upwards and downwards.

It also projects on a line posterior to the anterior transverse eminence of the last molar, and not at the dividing line between the sixth and seventh, as in the recent crania.

The floor of the orbit is considerably more elevated than in the recent specimens, being 1.9 in. above the enamel margin upon the neck of the penultimate molar; in the other being 1.1 in. only.

The depth of the orbital fossa, as formed by the orbitar process of the maxillary bone, has been the same in both the fossil and recent animal; but the outer edge in the former is elevated into a smooth rounded ridge, which either formed the inferior edge of the orbit, or else bounded an external smooth groove about two lines in depth and width, along the line of the maxillo-molar suture in the recent cranium; while in the latter, the edge of the orbit is formed by the malar bone, and presents no groove internally along the sutures, except at its anterior part, just external to the entrance of the infra-orbitar canal. The malar articulating surface in the fossil, is therefore not only external to, but several lines below the external edge of the orbitar process of the maxillary bone. This surface is also directed a little more outwards, as it proceeds backwards, than in the recent crania.

The line of the malar articulation would cause the head to appear somewhat broader opposite the temporal fossæ, and the elevation of the malar process, and of the orbit, would probably make the posterior part of the face appear higher in the fossil than in the recent animal. But the differences which I have pointed out, especially the generally vertical increase of diameter of the superior maxillary bone in the fossil specimen, may probably be dependent upon the advanced age of the individual, and the excessive development of the roots of the molars, which is a common occurrence in some animals, after the body of the tooth has been nearly worn down, as in the horse, &c.

The left half of the inferior maxilla has the condyle, all the margin of the bone below and posterior to it, and the coronoid process, broken off. As observed by Dr. C., it belonged to an individual "just attaining to adult age," as is indicated by its being about to lose the last of the temporary teeth, to be replaced by the third permanent premolar, which latter, in the specimen, is exposed from the former having been broken away. The sixth molar, or last true molar, is not wanting, as supposed by Dr. C., but has not yet protruded from the jaw. The roots only of the canines exist in the specimen. The incisors, except a fragment of the root of the right internal one, as well as the exterior of the alveoli are broken away; traces only of the alveoli of the lateral or most external incisors exist. I can observe no difference of character between the specimen and the recent jaw, except that the ridge occupying the interspace between the first premolar, and the canine, is not so strongly curved as in the latter, making them a very little, but to an unimportant degree, farther apart.

We have also in the collection of the Academy, the crown of a tooth of Tapirus Americanus fossilis, deposited by Dr. M. W. Dickeson, and found by him near Natchez, Mississippi. It is an inferior molar of the left side, apparently the third temporary molar. Its transverse eminences are worn to their base. Its proportions, and the fact of its being found associated with remains of Equus Americanus, Mastodon, &c., are sufficient to justify the opinion that it is fossil, and belonged to the same species as the inferior maxilla just spoken of.

Dr. Harlan, in his Fauna Americana,* has described the superior left molar tooth of a Tapir found in Kentucky, which he ascribes to a new species under the name of Tapirus mastodontoides. Upon comparing his description with the fossil fragments, and the recent specimens, I think there are not distinctive characters enough in it to distinguish it as a different species from the recent one, for the greater obliquity of the transverse eminences of the crown, and the slight variation in the form of the disks occasioned by attrition, appear to me to be nothing more than individual peculiarities.

---

* P. 224.

The monthly report of the Corresponding Secretary was read and adopted.

The Academy then, in accordance with the resolution adopted at the last meeting for business, proceeded to an election for a Recording Secretary and a Member of the Publication Committee, to supply the vacancies occasioned by the resignation of Dr. Gambel, with the following result:—

Recording Secretary.—Theodore F. Moss.

Member of Publication Committee.—Dr. Robert Bridges.

July 3d.

Vice President **Morton** in the Chair.

Letters were read:

From William Jameson, Esq., dated Quito, May 1st, 1849, announcing that he was preparing for the Academy another collection of Plants from the Andes, more extensive and varied than that previously sent, and in which he designed to group the species, so as to illustrate in some degree the modifications produced by elevation.

From Dr. Michel, of Charleston, S. C., dated June 25th, 1849, stating his intention to furnish to the Society, some additional remarks on the reproduction of the Opossum, "having recently confirmed his opinion expressed in a former communication to the Academy, that this Marsupial, like the Kangaroo, described by Owen, has no placental connection whatever."

From the Librarian of the British Museum, dated 1st June, 1849 returning acknowledgments for late numbers of the Proceedings.

From Edward Blythe, Esq., dated Calcutta, April 18th, 1849, acknowledging the receipt of his notice of election as a Correspondent.

From the Academy of Natural Sciences of Breslau, dated 18th April, 1849, acknowledging the receipt of the Proceedings from May to September, 1848.

From M. Verreaux, dated Paris, April 14th, 1849, returning acknowledgments for his election as a Correspondent.

Dr. Hallowell read a description of a new species of Eryx (*E. maculatus*) from Madras, with a colored drawing of the same, intended for publication in the Proceedings, which was referred to Drs. Keller, Bridges, and Townsend.

Dr. Hallowell also stated that the Salamander described by him in the sixth number, Vol. IV., of the Proceedings (*Salamandra lugubris,*) was from the Sandwich Islands, and not from Upper California; the error having arisen from a false label attached to the bottle containing the specimen.

July 10*th*.

Vice President **MORTON** in the Chair.

A letter was read from Professor Eschricht, dated Copenhagen, June 7th, 1848, acknowledging the receipt of his notice of election as a Correspondent, and proposing exchanges of the publications of Danish Societies for those of the Academy.

A letter was read from the Rev. Thomas S. Savage, dated Sumterville, Alabama, June 20th, 1849, addressed to Dr. Hallowell, and enclosing an interesting communication on the Driver Ants of Western Africa, intended for publication in the Proceedings. The latter was referred to the following committee: Prof. Haldeman, Dr. Leidy, and Dr. Hallowell.

July 31*st*.

Vice President **MORTON** in the Chair.

The Committee to whom was referred Dr. Hallowell's description of a new Eryx, from Madras, reported in favor of publication in the Proceedings.

Description of a species of Eryx, from Madras.

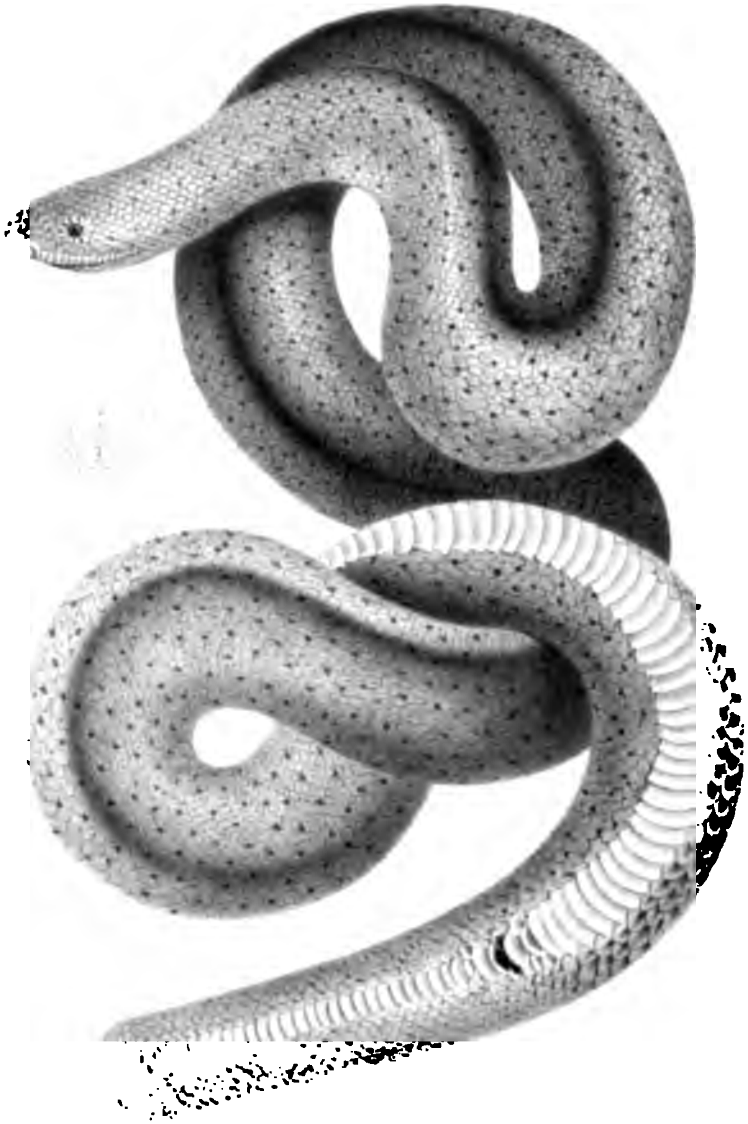
BY EDWARD HALLOWELL, M. D.

Eryx maculatus.

Description.—Head of moderate size, depressed, covered with scales, larger in front; rostral plate large, triangular; a single nasal plate on each side; nostril small; thirteen labial plates margin the upper jaw; pupil vertical, eye surrounded by a circular series of plates; iris brownish red; neck of same size as head posteriorly; body thicker in the middle, becoming somewhat slender towards the tail; scales small, carinated; a row of single plates under the tail, followed by others which are bifid; tail short, truncate, (mutilated ?)

Color.—Light brown above, with numerous spots of the same tint but darker; abdomen light slate color.

Observations.—This beautiful reptile was pointed out to me so long ago as 1840, by the late Dr. Harlan. It was brought from Madras, in the neighborhood of which it was found upon a sandy soil. It appeared to be perfectly harmless. The drawing was taken during life by Mr. Richard, and is remarkable for its accuracy. The above short description is made up from it, the notes which were written during its life having been mislaid. It, however, is so good that a description of any kind is almost unnecessary. The entire length was abont one foot and a half. I have long hesitated to publish a description of this animal, coming as it does from a part of the British possessions so well known as Madras, but having recently observed in the Annals and Magazine of Natural History, several species of reptiles described by Mr. Gray as new from the same locality, not being found in the British Museum, and differing so entirely as it does from any figure of Eryx hitherto published, I have ventured to present it to the Academy with the name I have given it.



ERYX MACULATUS

The Committee on Dr. Keller's analysis of a calculus from the bladder of a Whale, reported in favor of publication in the Proceedings.

Chemical Analysis of a Calculus from the bladder of a Whale.

By William Keller, M. D.

Whalers report that it is not unusual to find a number of calculi in the bladder of the whale. These calculi are about the size of a hen's egg, on the surface very smooth, and of a white color. On breaking them they are seen to be formed of concentric layers, from the thickness of a sheet of paper to that of a quarter of an inch; the chemical composition throughout being very nearly the same. Mr. Saul Muller and myself took for analysis different layers, and found them of the same composition. The chief constituent of the calculus is the double phosphate of ammonia and magnesia. The quantity of ammonia could not be directly ascertained, passing off at the summer temperature. But it will be seen that the quantity of phosphate of magnesia found, will answer to the quantity of ammonia and water found necessary for the formation of the double phosphate.

The pulverized stone was first exposed to the heat of a water bath, to ascertain the quantity of water; heated with ether and alcohol to find the quantity of fat; then dissolved in nitric acid, the residuum incinerated, the loss was organic matter and uric acid, while the residuum was silicic acid. The quantity of magnesia was ascertained as ammoniaco-magnesian phosphate, the phosphoric acid as phosphate of iron. The carbonic acid, the quantity of which was very small, was found by the apparatus of Will and Fresenius. The rest of the component parts were in such small quantities that they could not be weighed: they were iron, lime, chlorine and soda. The ammonia and water were ascertained by calculation.

Analysis.

Found.		*Calculated.*	
P_2O_5	27.21	P_2O_5	27.21
Mg O	15.75	Mg G	15.75
Fat	0.39	NH_4	6.08
$\bar{U}$	2.66	HO	44.59
SiO_2	2.18	Fat	0.89
HO	32.17	$\bar{U}$	2.66
CO_2	0.05	SiO_2	2.18
		CO_2	0.05
	80.41		98.81

Traces of NaO, CaO, FeO, Cl.

DONATIONS TO MUSEUM,

In May, June and July, 1849.

May 1st.

Specimen of Tropidonotus leberis, from Montgomery Co., Pennsylvania. From Dr. Watson.

Several specimens of a fruit, popularly called Snake-nut, from Demerara. From F. X. Gartland.

Seventy-one specimens of British Lepidoptera. From Mr. Hagedorn, of Philadelphia, through Mr. Percival.

Dr. Morton deposited thirty Peruvian Crania, from the ancient cemetery of the Temple of the Sun, near Lima, being a collection made by Mr. Wm. A. Foster, now of Lima. Also an ancient Egyptian cranium from the Necropolis of Memphis, whence it was brought by Dr. Huffnagle, of Calcutta.

May 15th.

The following fine collection of Skeletons and Crania, including sixteen of the former, and ninety-six of the latter, was presented by Dr. Paul B. Goddard: *Skeletons.*—Phoca vitulina, Delphinus delphis, Dasypus septemcinctus, Dasyprocta acuta, Pteropus ——, Dicotyles torquatus, Macacus ——, Scalops canadensis, Ara ——, Psittacus ——, Lutris ——, Rhamphastos ——, Phœnicopterus ——, Ibis ——, Chamæleo, and Alligator Mississippiensis.

Crania.—Rhinoceros (2), Elephas, Phoca, Delphinus (4), Tapirus, Equus, (10), Canis (10), Ursus (3). Felis (2), Simia (9). Lepus (6), Cœlogenys, Hydrochærus, Fiber (2), Hystrix (3), Hydromys, Didelphis (2), Lutra (3), Castor (2), Condylura, Camelus, Scincus (4), Arvicola, Mephitis (3), Cervus (6), Bos (2), Geomys (2), Mustela (5), Myrmecophaga, Dasypus (2), Chelonia (3).

Also a cast of the cranium of Delphinus calvertensis. Presented by the same.

May 22d.

Two specimens of Ophiosaurus ventralis, from Beaufort, S. Carolina. Presented by Mr. James Read.

Numerous specimens of impressions of Fossil Plants from the coal fields of Hazleton and Beaver Meadow. Presented by Mr. Samuel Powel.

The following additional collection in Comparative Anatomy was received from Dr. Goddard, viz.: The scapula, humerus, four vertebræ and two petrous bones of the Whale; cranium of Rhinoceros; four do. of Bos; two do. of Equus; one do. of Capra; two do. of deformed Ovis; one do. of Alligator; thirty do. of Birds; three do. of Fish; exoskeleton of Diodon; nine Shark jaws; two bones of Mastodon; and a cranium of Lepidosteus.

June 5th.

Fine and large specimen of Malachite, from Berks Co., Pennsylvania. Deposited by Mr. Samuel Powel.

Two species of Lepidodendron, and one of Stigmaria. Presented by Mr. H. Hazzard.

June 12th.

Skin of Pelecanus fuscus. From Mr. Harrison.

Very fine specimen, of large size, of Sulphuret of Iron from Elba. From M. Verreaux, of Paris, through Dr. Wilson.

Two specimens of Palæmon spinimanus, two of Pseudocarcinus Rhumphii, Driphia gonagra, Goniopsis ruvicola, Gelasinus vocans, from Brazil. Presented by Dr. Wilson.

June 19th.

The following collection was received from William Thompson, Esq., of Belfast, Ireland, in exchange, viz.: Two species of Lepus, in skin; one of Mustela erminia, (summer pelage,) from Ireland; and numerous specimens of the following genera of Shells, Crustacea, Echinodermata, &c., viz.: Ostrea, Teredo, Pholas, Saxicava, Limneus, Planorbis, Dentalium, Aplysia, Bullæa, Doris, Chiton, Eolis, Actæon, Notodelphys, Chelura, Limnoria, Halarachne, Octoleothrium, Pagurus, Adamsia, Tristoma, Cecrops, Halichondria, Spongilla, Grantia, ——, Macropodium, Inachus, Hyas, Eurynome, Xantho, Cancer, Carcinus, Portunus, Pinnotheres, Corystes, Pagurus, Porcellana, Galathea, Astacus, Crangon, Pandalus, Palæmon, Pycnogenum, Cecrops, Homarus, ——, Comatula, Ophiura, Cribella, Soleaster, Asterina, Goniaster, Echinus, Echinocyamus, Spatangus, Amphidolus, Cucumaria, Ocnus, Thyone, Holothuria, Sipunculus, Uraster, Acamarchis, Anguinaria, Alcyonidium, Alcyonium, Antennularia, Campanularia, Cellularia, Crisea, Cellepora, Discopora, Eudendrium, Farcimia, Flustra, Hydractinia, Laomedea, Lepralia, Membranipora, Notamia, Paludicella, Plumularia, Serialaria, Thoa, Sertularia, Thuiaria, Tubulipora, Valkeria, Vesicularia, Virgularia, ——. Also 144 species of marine Algæ, from the Irish coast.

July 10th.

Goniaster reticulata; from Maracaibo. Presented by Dr. C. D. Meigs.

Specimen of gray Sulphuret of Copper, from the Schuyler Mines, and Red Oxide of do., from Washington Mine, New Jersey. Presented by Theodore F. Moss, Esq.

Leuciscus atronasus, in spirits. From J. D. Sergeant, Esq.

Vest and Eggs of Hirundo rufa. From Mr. J. Stalder.

DONATIONS TO LIBRARY.

In May, June, and July.

May 1st.

Twelve lectures on Comparative Anatomy, delivered before the Lowell Institute, January and February, 1849. By Jeffries Wyman, M. D. From the author.

Researches upon the vital dynamics of civil government. By B. Dowler, M. D. From the author.

Echinidæ, recent and fossil, of South Carolina. By E. Ravenel, M. D. From the author.

Eloge historique de Jean Frederich Blumenbach. Par M. Flourens. From Dr. Morton.

De Epidermide humana. Auctor Alphonsus Wendt. From the same.

Afferunter nonnulla ad Amiam calvam (Lin.) accuratius cognoscendam. Auctor Henricus Franque. From the same.

Bibliothéque Zoologique et palæontologique. Par Louis Agassiz. Folio. From the same.

Dr. Wilson deposited the following:—

Conchologia iconica. By Lovell Reeve. Part 72. 4to.

History of British Mollusca. By Prof. Forbes and S. Stanley. Part 14. 8vo.

Phycologia Britannica. By Wm. H. Harvey, M. D. Part 39. 8vo.

Illustrations of the Birds of Jamaica. By P. H. Gosse. Part 12.

The Genera of Diurnal Lepidoptera. By Edward Doubleday. Part 26. 4to.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 24. 4to.

Annals and Magazine of Natural History. Vol. 3. New Series. No. 15.

The Natural History of Ireland. Vol. 1. Birds. By Wm. Thompson, Esq. 8vo.

The Naturalist's Repository. By E. Donovan. 5 vols. 8vo.

Abhandlungen aus dem gebiete der Naturwissenschaften herausgegeben von dem Naturwissenschaftlichen Verein in Hamburg. Vol. 1.

Voyage of the Blonde to the Sandwich Islands in 1824, '25.

Bulletin de l'Academie Royale des Sciences de Belgique. Vols. 1 to 11, Vol. 12, part 1, Vol. 13, part 1. 8vo.

Madras Journal of Literature and Science. Nos. 1 to 18.

May 18*th*.

The American Journal of Science and Arts. New Series, No. 21. May, 1849. From the Editors.

Comptes rendus. Tome 28. Nos. 4, 5, 6. Deposited by Dr. Wilson.

The London Athenæum. March, 1849. From the same.

May 15*th*.

Phrenologien bedömd fran en Anatomisk standpunkt. Af Prof. A. Retzius. From the author.

Peruvianernas Craneiform af A. Retzius. From the same.

In systema nervorum sympatheticum Gadi lotæ Lin. observationes. Scripsit O. E. A. Hjelt. From Dr. Morton.

Notice sur deux espèces de Brachiopodes du terrain palæozoique de la Chine. Par L. De Koninck, D. M. From the same.

Memoir of Dr. Thomas Charles Hope. By Thomas Steuart Trail, M. D. From the same.

Additional observations on a new living species of Hippopotamus, of Western Africa, (H. Liberiensis.) By S. G. Morton, M. D. From the same.

Indices generum Malacozoorum primordia. Conscripsit A. N. Heermannsen. No. 10. From Mrs. L. W. Say.

Experimental researches in Electricity. 22d series. By Michael Faraday. 4to. From the author.

Ueber die vorbedingungen zur entstehung einer Chronologie bei den Ægyptern und die Möglichkeit ihrer Wiederherstellung als einleitung zur Chronologie der Ægypter. Von R. Lepsius. 4to. From the author.

Report by the Superintendent of the Coast Survey, on an application of the galvanic circuit to an astronomical clock and telegraph register in determining local differences of longitude, &c. From Prof. A. D. Bache.

June 5*th*.

Proceedings of the American Philosophical Society. Nos. 39 to 42, July, 1848, to March, 1849. From the Society.

A lecture on the mechanical industry and the inventive genius of America. By Walter R. Johnson. From the Author

History and transformation of Corydalus cornutus. By S. S. Haldeman. Internal anatomy of the same. By Joseph Leidy, M. D. From the Authors.

June 12*th*.

Dr. Wilson deposited the following:—

The London Athenæum, January to December, 1848. The same for April, 1849.

History of British Mollusca. By Prof. Forbes and S. Stanley. Part 16.

Revue Zoologique. No. 11 for 1848.

Phycologia Britannica. By. W. H. Harvey, M. D. Part 40.

Annals and Magazine of Natural History. Vol. 3. New series. No. 16.

Archiv für Naturgeschichte. Von A. P. A. Wiegmann. Herausgeg: von Dr. Erichson. No. 5 for 1847, and No. 2 for 1848.

Mémoires presentés à l'Académie Impériale des Sciences de St. Petersbourg. Vol. 6. No. 2. 4to.

The Zoology of the Voyage of the Samarang. No. 4. 4to.

Abbildungen und Beschreibungen neuer oder wenig gekannter Conchylien. Von. Dr. R. A. Phillippi. Vol. 3. Part 4.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 25. 4to.

Comptes Rendus. Tome 28. Nos. 7—13.

Isis von Oken. Nos. 8 and 9 for 1848.

The genera of Diurnal Lepidoptera. By Edward Doubleday. Part 27. 4to.

Zeitschrift für Malakozoologie. Von Karl Theo. Menke, M. D. and Dr. L. Pfeiffer. Jan.—Dec. 1849, Jan.—July 1848.

Illustrations of the Birds of Jamaica. By P. P. Gosse. Part 13.

Zoologia Typica. By Louis Frazer. Part 14.

Reise um die Erde durch Nord-Asien und die beiden Oceane in dem Jahren 1828, '29, '30. Von Adolph Erman. Vol. 1. 8vo.

Untersuchungen uber Trilobiten von Dr. Ernst Beyrich. 4to.

Die bis jetzt bekannten arten aus der famille der Regenwürmer. Von W. Hoffmeister. 4to.

Symbolæ ad Erinacei Europæi Anatomen. Auctore Mauritius Sembert. 4to.

Incones Physiologicæ. Auctore Rudolpho Wagner. 4to.

Zoographia Rosso-Asiatica. Auctore Petro Pallas. 3 vols. 4to. Icones 6 fascic. 4to.

Lehrbuch der Anatomie der Wirbelthiere. Von Dr. R. Wagner. 2 vols.

A general synopsis of Birds, and Supplement. (J. Latham.) 8 vols.

Index Ornithologicus. Auctore Joanne Latham. 2 vols. 4to.

The Naturalist's Library. Ichthyology, Vols. 2, 4, 6. Entomology, Vols. 6 and 7. Mammalogy Vols. 7 and 8. 12mo.

Malacologia Monensis. A catalogue of the mollusca inhabiting the Isle of Man. By Edward Forbes. 8vo.

A synoptical table of British organic remains. By Samuel Woodward. 8vo.

Getruen darstellung und beschreibung der Thiere die in der arzneimittellehre in betracht kommen in systematischen folge herausgeg. Von J. F. Brandt und J. T. C. Retzeburg. 2 vols. 4to.

Recherches anatomiques et physiologiques sur la gestation des Quadrumanes. Par G. Breschet. 4to.

Abbildung und beschreibung merkwürdiger Säugethiere von Dr. Weigmann Nos. 1 and 2, 4to., and Atlas folio.

Recherches sur les animaux fossiles. Par L. De Koninck, D. M. Part 1.

Cours sur la génération, l'ovologie et l'embryologie, fait au Museum d'histoire naturelle en 1836, par M. Flourens. 4to.

Analecten fur Vergleichunde Anatomie. Von Dr. Mayer. 4to.

Beiträge zur kenntniss des Norddeutschen Oolithgebildes und dessen Versteinerungen. Von Fr. C. L. Koch und W. Dunker. 4to.

Incones Zootomicæ. Von Rudolph Wagner. Folio.

Delectus Floræ et Faunæ Brasiliensis. Auctore J. C. Mikan. Parts 1—4. Folio.

June 19*th*.

Sixty-second Annual Report of the Regents of the University of the State of New York. From the Regents.

The progress of Ethnology. By J. R. Bartlett. Second edition. 8vo. From Dr. S. G. Morton.

American Ethnology. By E. G. Squier. From the same.

Catalogue of the plants of Cincinnati, collected by T. G. Lea. From Mr. J. M. Lea.

July 3*d*.

Report of a Geological Reconnoisance of the Chippewa land district of Wisconsin and the Northern parts of Iowa. By David Dale Owen. 8vo. From Mr. J. Sergeant, jr.

The Hisfory of Mexico. By Abbe D. Francesco Clavigero. Translated from the Italian by Charles Cullen, Esq. 2 vols. 4to. From Dr. R. Bridges.

The Natural History of Ireland. By William Thompson, Esq. Vol. 1. Birds. 8vo. From the Author.

Note on the Teredo Norvegica, Xylophaga dorsalis, &c., combined in destroying the submerged wood work at the harbor of Androssan, on the coast of Ayrshire. By W. Thompson. From the same.

Note on the effects of the hurricane of Jan. 8th, 1839, in Ireland, on some birds, fishes, &c. By W. Thompson. From the same.

The Crustacea of Ireland, order Decapoda. By W. Thompson. From the same.

Note on Pagurus Prideauxii. By W. Thompson. From the same.

Note on Argulus foliaceus, Jur. By W. Thompson. From the same.

On the species of Stickleback (Gasterosteus, L.) found in Ireland. By W. Thompson. From the same.

On a new genus of Fishes, from India. By W. Thompson. From the same.

On Ova, believed to be those of the large spotted Dog fish, (Scillium catulus, L.) From the same.

On some snow crystals observed on the 14th of January, 1838. By W. Thompson and R. Patterson. From the same.

Comparison of the periods of flowering of certain plants in the early spring of 1846, in the Botanic Garden of Belfast, and the Jardin des Plantes at Paris. By W. Thompson. From the same.

On a minute Alga which colors Ballydrain Lake in the County of Antrim. By W. Thompson. From the same.

Note on the occurrence at various times of the bottle-nosed Whale Hyperodon Butskopf, Lac.,) on the coast of Ireland, &c. By W. Thompson. From the same.

Report on the Fauna of Ireland. Div. Invertebrata. By W. Thompson. From the same.

On an apparently undescribed species of Lepadogaster, and on the Gobius minutus, Müller, and Cyclopterus minutus, Pallas? considered as the young of C. lumpus, Linn. By W. Thompson. From the same.

July 10th.

American Journal of Science and Arts. New series. No. 22. July, 1849. From the Editors.

Archiv für Naturgeschichte. Von A. P. A. Wiegmann; Herausgeg. von Dr. Erichson. No. 6, for 1847. Deposited by Dr. Wilson.

Comptes Rendus. Vol. 28. Nos. 14, 15, 16. From the same.

London Athenæum, for May 1849. From the same.

Isis von Oken. No. 10, for 1848. From the same.

Revue Zoologique. No. 12, for 1848. From the same.

United States Exploring Expedition. Atlas to Zoophytes, by J. D. Dana. Folio. From the same.

On the Composition of the Schuylkill Water. By M. H. Boye, M. D. From the Author.

Journal of the Indian Archipelago and Eastern Asia. Vol. 8. Nos. 1 and 2. From the Editors.

Monographie des Erotyliens. Par M. Th. Lacordaire. 8vo. From the Author.

August 7th.

DR. BRIDGES in the Chair.

The Chairman read the following letter addressed to him by Dr. C. D. Meigs, dated New Haven, Connecticut, Aug. 4th, 1849, relating some experiments which he made to ascertain the effects of deep-sea pressure on the uterus of the Cetacea; and which resulted in confirming the views which he expressed in his paper on this subject, published in the last number of the Journal of the Academy, (New Series, Vol. 1, Part 3.)

"Yesterday, (May 3d,) I obtained permission to use the custom house boat, a small sloop, to go out into the sound for the purpose of trying my experiment on the effect of sea-pressure on the uterus.

I was fortunate in having as companion for the excursion, Mr. Theodore W. Werner, of the Coast Survey, a gentleman who is occupied in this part of the country, and was for a long time one of Mr. Haslar's assistants. I had a gum-elastic bag, shaped very much like the uterus in question. It was fitted with a smooth neck, or *goulot*, stopped with a velvet cork that fitted accurately.

Mr. Werner was of opinion that the cork would not escape, but rather be driven in; in which he coincided with yourself and others. The wind being light, we could not find water over 9½ fathoms.

Mr. Werner calculated that the pressure at 60 feet below the surface would be over 1000 pounds.

We threw the sloop in stays, and hove the dipsy overboard, which carried the uterus to the bottom. It came up with the cork undisturbed; a second and third trial were followed by the same result. On the fourth trial, having inflated the uterus, and adjusted the cork very lightly, it came up, having lost the stopper.

Now, you will please observe, that the experiment was a very fair one, for as the throat of the bottle was tied to the dipsy line, the cork necessarily looked downwards, and if floated at all, it must float towards the throat of the bottle.

I threw it over again, and by the time it reached the bottom, the cork was driven out with violence, and the whole of the air came rushing to the surface, so as to make me think, when I saw it coming from below, that a Dolphin was shooting upwards to the surface.

Mr. Werner was very much gratified with the result, and I assure you I was not less so; and I conclude that it justifies me in the rationale I have given of the economical purpose of the double cervix of the Cetacean female."

The Publication Committee announced the publication of Part 3, Vol. 1., New Series of the Journal of the Academy.

August 14th.

Vice President MORTON in the Chair.

A paper entitled "On several new Hymenoptera, of the genera Ampulex, Sigalphus, Chelonus and Dorylus, by S. S. Haldeman," was read and referred to a Committee consisting of Drs. Leidy, Zantzinger and Keller.

The Chairman read an extract of a letter from Maximilian, Prince de Wied, accompanying the copy of Dr. Rüppell's work on the Fauna of Abyssinia, announced at last meeting.

On motion, it was *Resolved,* That the Publication Committee be authorized to present to the Prince de Wied, Part 2, Vol. VIII., First Series, and Parts 1, 2 and 3, New Series, of the Journal of the Academy.

August 21st.

Dr. Bridges in the Chair.

The following letter from Miss M. H. Morris, of Germantown, dated July 21st, 1849, was read by the Corresponding Secretary.

"I have delayed proposing a name for the Cecidomyia, that feeds in the culm of the wheat, because I wished my communication to be accompanied by a complete series of specimens from the egg to the perfect fly; but since 1843, it has not appeared in this neighborhood in sufficient numbers for me to trace it through its several changes: I am therefore obliged to offer the name of *C. culmicola*, as an appropriate one, with a brief history of its habits, as I have seen it, and trust I may be more fortunate in future in procuring specimens for examination and description.

The insect deposits its eggs early in June, on the grain, in or over the germ, while the grain is in the soft or milky state. The eggs remain unhatched until the grain germinates, but when the plant has grown about three or four inches, the worm may be seen, with the aid of a strong magnifying glass, feeding above the top joint, in the centre of the culm, where it remains until it has arrived at maturity. Should this occur before the culm has become hard, the worm eats its way through the joints, inside of the straw, and makes its escape at the root, ascends the straw on the outside, where it attaches itself firmly, and awaits its change; the outer skin becomes the puparium. In the pupa, or flax-seed state, it closely resembles the *C. destructor*, and has heretofore been mistaken for that species.

Should the culm of the wheat become prematurely hard before the worm has finished feeding, as is often the case, the insect will remain imprisoned for life, passing through its changes inside the straw, and there perish without the power to escape, unless some accidental passage be made for it. I have liberated hundreds with my pen knife, and thousands make their escape after the grain has been reaped and carried into the barn.

When the insect is thus unnaturally retarded, the time of its perfect development is uncertain; and I have found them on the straw, and in spiders, webs, in and near a barn, from June until September. This destructive insect may therefore be carried in the straw from one country to another, as well as in the grain."

Letters were also read:

From the Secretary of the Royal Academy of Sciences, of Brussels, accompanying the donation of the numbers of the Bulletin of that Society, announced this evening, and soliciting an exchange of publications, which was accordingly ordered.

From M. Lacordaire, dated Liege, April 20, 1849, returning acknowledgments for his election as a Corresponding Member, announcing the receipt of the Proceedings of the Academy presented to him in return for a copy of his late work, in two volumes, "Monographie des Phytophages," and also proposing an exchange of Coleoptera of North America for those of Europe.

From M. Fischer de Waldheim, dated Moscow, 1st May, 1849, acknowledging the reception of his notice of election as a Correspondent.

Mr. Cassin called the attention of the Society to the specimen of Anas Rafflesii, King, (Jard. and Selby, Ill. Orn. n. s., pl. 23,) presented this evening by E. Pilaté, M. D., of Opelousas, La. This, Mr. C. stated, is the first instance of the capture of this species within the limits of the United States, to the fauna of which it is an addition of the highest interest.

Dr. Pilaté, who obtained the present specimen in the neighborhood of his residence, represents it as the only one which has come under his observation. To this gentleman, who is ardently devoted to the study of Ornithology, the Academy is highly indebted for this valuable specimen.

August 28*th.*

Vice President MORTON in the Chair.

The Committee to which was referred the paper of Dr. Savage, on the Driver Ants of West Africa, reported in favor of its publication in the Proceedings of the Academy, with some additional observations by the Committee, suggested by the specimens sent by Dr. Savage with the paper.

The Driver Ants of Western Africa.

BY THOMAS S. SAVAGE, M. D.

These remarkable and interesting insects have been, till quite recently, without their place in our systems of Natural History. Occasional, but very imperfect notices have been given from time to time of Smeathman and Afzelius to the present, of one or two annoying features in their economy; but till now, no regular description either of their entomological character or habits.

In 1845, the author of this article, after a series of observations, sent, in compliance with a promise, a detailed account of their habits, with numerous specimens, to J. O. Westwood, Esq., Secretary of the Entomological Society of London.*

Mr. W. dissected with that minuteness and accuracy for which he is so remarkable, individuals of the three classes into which they had been divided, and published the results with illustrations, supplementary to the account, in the Transactions of the Society.

The insect in its perfect state had not then been discovered. Neuters with larvæ and pupæ only were sent. The former only (neuters), it seems, arrived in a state for examination. This is the more to be regretted, since, soon after sending his account to London, the author left the locality for his health, without the prospect of returning.

---

* See Vol. 5, First Part, Transactions of London Entomological Society, for remarks of Mr. W., and the account of the habits of the insects, more in detail.

The statement in the *account* that the insect was without eyes, (*i. e.* the neuter,) was confirmed by Mr. Westwood, which fact renders certain features of their economy the more remarkable.

Mr. Shuckard gives, in the Annals and Magazine of Natural History, London, a new species of the Formicidæ, on which he founds the genus *Anomma*. To this Mr. Westwood assigns the Driver of West Africa, and describes it as a new species under the name of *arcens*, in allusion to the remarkable habit which has gained for it the significant name of *Driver*.

Since his communication to the Entomological Society of London, the author has discovered a second species, which he denominates the *Red Driver*, a description of which follows that of the black species.

Description.—Family Formicidæ (*Leach*); Genus Anomma (*Shuckard*).

Species 1. ARCENS (*Westwood*).

Neutr.—Nigra, subnitida; antennis (articulo basali excepto), coxis, geniculis, tarsisque piceis; capite plus minusve oblongo-quadrato, in individuis maximis postice magis angusto, margine postico emarginato; clypeo, inter basin antennarum, bicarinato; antennis impressionibus duabus insertis, 11-articulatis; oculis obsoletis; mandibulis elongatis, gracilibus, falcatis, ante medium dente majori alteroque pone medium plus minusve distincto, interstitio serrato; maxillis labiis duobus apicalibus, externo ad apicem setoso; palpis maxillaribus brevissimis, et, ut videtur, 3-articulatis; labio magno carnoso striato, palpis labialibus longitudine labii 2-articulatis, thorace e segmentis duobus longitudine æqualibus constanti, prothorace infero, lateribus dilatatis tamen supra visis; meso-thorace antice latiore, meta-thorace parum compresso utrinque spiracula instructo, apice recte truncata; abdominis pedunculo elongato utrinque versus basin tuberculo minuto instructo; segmento sequenti pedunculo latiori semi-ovali, reliquis parum constrictis.

Long. corp. lin. 1¾–5.

Habitat in Africa occidentali tropicali.

In Mus. Westw. Acad. et Nostr.

This species was captured at Cape Palmas, Lat. 4° 26′ N., and is to be found throughout the West Coast; Cape Palmas, however, and a few hundred miles east and west, being its proper locality.

Species 2. A. RUBELLA, *Savage*.

Neutr.—Rubra, subnitida; antennis, coxis, geniculis tarsisque rubris, versus marginem diaphanis.

Long. corp. lin. 1¾–4.

Habitat in Africa occidentali tropicali.

In Mus. Acad. et Nostr.

The neuters of A. *rublela* are less numerous than those of *arcens*, and, generally, of a smaller size. The mandibles are less falcate and pointed: their habits the same.

This species I discovered in the Mpongive District, a section of the west coast on the banks of the Gaboon river, near the Equator.

Habits —They are exceedingly ferocious. They have no permanent dwelling place, but wander about in search of prey. Shallow cavities and crevices in rocks, are adopted as their temporary habitations. The deepest cavity for this purpose discovered, did not exeed two feet. The interior exhibits no mechanical contrivance for the depositing of food, or hatching of eggs; for these purposes, spaces between the stones, sticks, &c. found within, are adopted.

This absence of mechanical arrangement in their dwellings accords well with their known predaceous habits.

Their sallies are usually made towards night, and in cloudy days. Should they be detained abroad till late in the morning of a sunny day, they construct for their protection against the heat, arches over their path, of earth, agglutinated by a fluid secreted from their mouths. Should their course lie through thick grass or projecting substances, the arch will be wanting, or more or less imperfect, depending on the degree of shelter thus afforded.

That this arch is designed to protect them against the heat, may be inferred from its absence in cloudy or rainy days. Such is their extreme sensitiveness, that, when exposed to the direct rays of the sun, especially if the heat be increased by reflection from surrounding surfaces, they expire in the space of two minutes. Even with the arch, when far from their domicil, they will retire in the middle of the day to the thick grass, and there regale themselves in the shade till the decline of the sun, when their work is renewed with characteristic vigor.

In migrating, protection is afforded to their pupæ and young, by an arch constructed of the bodies of the larger class, or soldiers. Their mandibles and legs are so curiously locked and intertwined, that a complete and formidable covering is presented; at such times individual soldiers will be seen on the outside, acting as guards and scouts, while others of the same class are within, apparently performing the part of superintendents and commanders. In case of alarm the arch is instantly broken, and the soldiers are seen running about in the most confused and hurried manner, with their jaws extended and antennæ working in all directions, thus presenting a highly angry and ferocious aspect. Should the alarm prove false, the victory be won, or danger passed, the arch is quickly renewed, the main column brought again to order, and their march resumed in all the regularity of intellectual, military discipline. Their paths present a beaten appearance, with freedom from all moveable obstructions.

As to their relation sustained to the economy of the community, they may be divided into three classes. It is the office of the first, or largest, which may be called the soldiers, to defend the community, attack and disable the prey. Their mandibles have long and slender points, well adapted to penetrate, and by their strongly falcate shape, to hold fast the objects of attack.

The second class frequently act as aids to the first, but their chief office evidently is, to lacerate the prey and reduce it to a portable condition. Their mandibles are flatter than those of the first, sharp, and have their teeth more developed.

The third are comparatively of very small size, and have their mandibles developed in a manner similar to those of the second class. These sustain chiefly the relation of *carriers*, and, perhaps, *with the second class*, may be properly denominated *laborers*. This diminutive size of the laborers is seen also among the Termites, or White ants, while the soldiers are comparatively of gigantic form.

There is occasionally an interchange of offices among these different classes, as when an individual is found inadequate to accomplish his task; but it is very evident to an observer, that in general, they sustain the relation to the community above described.

As soon as the prey is disabled, preparations begin for its transportation. While the class, whose duty it is, are lacerating the flesh, and reducing it to a state proper for removal, others are engaged in clearing a path between the locality and their domicil; the whole under the conduct of individuals of the first class.

This stage of their operations is intensely interesting to the observer. The facility and rapidity with which these little creatures, without the aid of eyes, overcome mountain obstacles, is surprising beyond expression; the greater the difficulty, the greater their effort and perseverance. One is seen dragging along a straw or stick many times his own length and size; another grasping, rolling, then pushing along a stone far exceeding his own weight and bulk, and when his own power is not sufficient, calling in the aid of others, each knowing that a work is to be done, none idle, and every one doing promptly his part. At first, in the preparatory stage, there is apparently considerable confusion, the different classes commingled, running backwards and forwards, and many missing the direct way to their domicil. But soon the soldiers are seen moving about with great activity, evidently bringing the lines into order. After a while they arrange themselves at different distances, on both sides of the path. The laborers are then kept within, in two nearly right lines, one going and the other returning; while on the outside are guards and scouts, intent upon the approach of danger, and ready to give alarm.

The pupæ and prey are carried longitudinally under their body.

Their bite is severe, and differs from that of the soldiers among the Termites. The latter work their mandibles, which are flat, in a cross direction, like scissors. The former, with mandibles falcate, round and pointed, work them alternately from side to side, penetrating deeper at each stroke, till they meet beneath the flesh. So tenacious is their hold, that frequently it is broken only by a separation of the head from the body, and even, then the head will often continue to work its jaws beneath the flesh with undiminished force.

The degree of sagacity manifested by this insect in time of difficulty is very great. On one occasion, having been driven from their domicil by the application of fire, they congregated in vast numbers around and on the body of a neighboring tree. From the lower limbs, about four feet high, hung several chains or festoons of these insects, their jaws locked and their legs twined, one with another, till they reached the ground. One of these chains, on my arrival, was in the act of completion. Ant after ant descended gradually, lengthening it out till it reached the broad leaf of a plant (Canna coccinea) below. It then swung to and fro, in a breeze blowing strongly from the sea, which rendered it difficult for the terminal ant to secure his hold, and thus complete the desired communication. After a few unsuccessful trials, another ant of the same class (the soldiers) ascended the plant, and taking his stand on the leaf directly under the vibrating column, fixed his hind claws in the leaf, and raising his body on the apex of his abdomen, reached forth his fore legs, opened wide his jaws, and closed in with his fellow from above, thus completing the most curious ladder in the world. Another fact of great interest: should a stream of water of small extent, intercept their course, they will compass it, but if this be difficult, they will throw across a bridge of their own bodies, over which the main column marches with freedom and safety.

Another habit of equal interest may be here stated. A like assertion has been made of another species of South American Formicidæ, but doubted by some "in-door" naturalist or compiler.

The seasons in West Africa are divided into "wet" and "dry," each making up about half of the year. During the former, violent and continued rains often occur, which, either directly, or from the rapid rise of the river, cause an overflow of the low grounds. As the Drivers delight in rather low situations, usually little above the base of hills, they are often exposed to inundations. In such emergency, they leave their domicils, throw themselves into a rounded mass, deposit their eggs, &c. in the centre, and thus float on the water, till a place of safety is reached, or the flood subsides. Even in situations beyond this overflow, so copious and incessant are the rains at times, that they must be deluged for days in their nests. Under such circumstances, one would suppose that they would perish. Many undoubtedly do, for all communities of animal existences are exposed to casualties. But in this case, as throughout the kingdom of nature, God has most graciously established a system of compensation, illustrating at once the minuteness of his Providence and his benevolence. As he has endowed this insect with a high degree of vitality, so has he given to it great tenacity of life and powers of endurance.

Individuals submerged in water have lived more than 24 hours; and when decapitated, 48 hours! The head separated from the body will bite for several hours after, apparently with as much force as when in all its natural connections.

They are decidedly aggressive in their habits. The dread of them rests upon every living thing. It is a statement literally true, that "they drive everything before them, capable of motion." Their entrance into dwellings is known by the simultaneous movement of rats, mice, lizards, roaches, &c. &c. with which they may be infested. Even man, styled "*Lord* of creation," bows to this, a more numerous foe; for let the Drivers enter one door and he quickly escapes at the other.

So intense is the bite by accumulation, that the largest animal, if confined, is overpowered and destroyed. The dread with which all animals are inspired, of this diminutive creature, may be inferred from the statement universally made by the natives on the coast, respecting their largest serpent, the *Python natalensis*. After disabling its prey by the fearful process of constriction, the Python, it is said, makes a wide sweep in the vicinity, to see if the Drivers are near; should they not be, he returns to the work of engorgement, but if near, he abandons his prey to their more numerous jaws.

Donkeys, on coming to them, crossing the road, will suddenly turn, and throw their rider to one side, and if urged onward will give a leap far over the line.

Dogs, rather than run the risk of a leap, will compass their track by going a long distance round.

The smaller snakes, lizards, &c., are disabled very soon after the attack. This easy victory seems to be accomplished by an early destruction of vision. The mandibles of the Drivers being long and sharp-pointed, penetrate with great ease the membranes of the eye. Domestic animals being generally confined at night, are often destroyed by them.

When they enter a dwelling their movements are characterized with a good degree of order. If they discover prey, they congregate upon it in vast numbers, when they may be easily destroyed by boiling water.

Their ascent into beds may be prevented by putting the feet of the bedsteads into vessels of vinegar, or some other uncongenial fluid. This will be successful if the rooms be ceiled, otherwise they will drop from above, bringing along with them their noxious prey in the act of contending for victory.

For food they prefer fresh animal, or insectal matter. The larvæ of other insects, and the young of all animals, are obnoxious to them, hence all heaps of rubbish, and hiding places of such prey, when occurring in their route, are carefully explored. Hence, too, the Drivers, when returning from their predatory excursions, afford some of the rarest and finest of the smaller specimens of Entomology.

Newly expressed oils are also favorite articles of food, especially the vegetable, that obtained from the fruit of the Elais guiniensis—the Palm oil of commerce.

The Drivers, though often a great annoyance, are not without their uses in the economy of nature. They tend to keep down the rapid increase of noxious insects and smaller reptiles. They consume much dead animal and vegetable matter, which, constantly occurring in tropical climates, vitiates the atmosphere; and, which is not the least important, they compel the inhabitants to observe habits of comparative cleanliness in their dwellings and on their premises, as a filthy town or house is the sure object of frequent visits.

The natives of Africa dread their approach, for being almost naked, wearing a narrow piece of cotton around their loins only, they are the more exposed to their bites; but more especially, say they, "because they deprive us of two things we love most, *poultry and sleep*.

On the identity of Anomma with Dorylus, suggested by specimens which Dr. Savage found together, and transmitted to illustrate his paper on the Driver Ants. By the Committee to which it was referred.

In the letter transmitting his paper on the Driver ants to the Academy, Dr. Savage says, " In the small vial you will find specimens of *rubella*, with three very large individuals, which I consider the perfect insect. Now here is presented an interesting point of investigation, viz., the true relation of these larger individuals to the Driver ants." These specimens afford a solution to a probblem which has engaged the attention of entomologists; namely, the relation of the Dorylides to the Formicidæ, since the large ones alluded to belong to the genus Dorylus. They are 13 lines long, and seem to be referrible to D. nigricans, and they had cast their wings. There is little to indicate an identity of species between them and *rubella*, as these want the holosericeous surfaces. The color and texture of the head and mandibles agree, however, and the medial and posterior coxæ present a narrow excavation superiorly (for the reception of the femora when elevated,) in place of the conspicuous cup-shaped one in the corresponding limbs of the male. The mandibles in this sex are slender and have the apex incurved, but not falcate, and they are without teeth. The femora are extremely compressed, and the abdominal peduncle is about as wide as the succeeding segment.

There are two forms, both of *arcens* and *rubella*, one of which includes the largest individuals, the mandibles of which are armed with *one* abrupt, erect medial tooth; the other and more abundant form is variable in size, and the mandibles have *two* slender teeth directed forwards. The labial organs and maxillæ are alike in both forms of both species. These organs cannot be compared in 'Dorylus,' because, with the mouth, they are entirely wanting: the margins of the labium and labrum being solidly united.

The circumstances attending the capture of these insects are thus stated by Dr. Savage.

"In the month of April, 1847, I visited the mission of the Am. Board Com. For. Miss., at Gaboon, 15′ north of the equator. Walking out at 7 o'clock on a cloudy morning, I saw a column of red drivers crossing the path. They consisted of two lines, as is always the case, one going, the other returning to their domicil. I stopped some time to compare them with the black species which abounds at Cape Palmas and that part of the west coast generally. They were not as numerous nor as large as *arcens*, but equally ferocious and offensive. Their arrangements and movements were the same. I soon discovered within the lines the large insects in question. I was here taken by surprise, as I had observed nothing like them in the economy of the Black drivers. The first idea presented to my mind was, that they were captives, but on observing further, they seemed to be no unimportant members of the community. Within a distance of about two rods I discovered ten of this class. I was soon convinced that they belonged to the drivers, and proceeded to test the truth of the conclusion. I took one or two from the lines to a distance of six and ten feet. They seemed at once to miss their companions, and manifested great trepidation, and made continuous efforts to find a way of return. At last they reached the lines and instantly resumed their places, displaying at the same time decided gratification. Nor were the lines thrown into any confusion by their entrance, as they would most surely have been in case of a foreign insect or body. On further watching their motions, I perceived that they did not continue on with the drivers, but after going a certain distance returned. This they repeated, going and returning. What office they performed I could not discover. My time was limited, not permitting me to trace them to their domicil. It was with regret that I left them; but from the observations made, it was evident that they were members of the driver community. I cannot doubt that they are the perfect state of the insect. Several natives recognised them as insects that flew about, and into their houses at night. This is altogether probable when they first attain their winged state. Similar insects closely allied to Dorylus, it is known, fly at night into houses at Cape Palmas, undoubtedly bearing the same relation to *arcens* or the Black driver."

The facts here stated are sufficient evidence that Anomma *Shuckhard* 1840, is another condition of *Dorylus* Latr. 1802, which must take its place among the Formic-idæ, agreeably to the views of St. Fargeau. For the sake of convenient reference, we may, with Dr. Savage, regard the larger form of the drivers (Anomma) as *soldiers*, the intermediate ones as *workers*, and the smallest as *carriers*.

In the same manner, Shuckhard's view of the identity of Typhlopone with Labidus is rendered probable, which would require the latter to be placed in the Formic-idæ, to which Mr. Westwood has shown that Typhlopone belongs. Thus not only will Anomma and Typhlopone be superseded, but the supposed family of the Dorylidæ will be suppressed.*

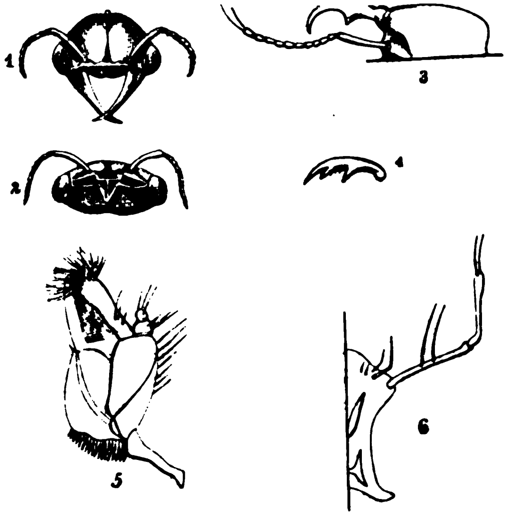
---

*Typhlopone pallipes *Hald.*, 1844, Proceed. Acad. 2, 54, does not belong to this genus, but rather to Amblyopone *Er.*, Arch. Naturg., 1842, p. 260, pl. 5, fig. 7: with the characters of which it agrees, except that the mandibles are toothed from end to end, and the antennæ are 12-articulate, instead of 11 as required by his text, although his figure represents 12. The eyes are visible, although small and indistinct.

The chief question remaining to be disposed of relates to the female. The thorax of the soldiers presents no observable alar cicatrices, and as they are anomalous in their small size when compared with the male Dorylus, we must search for the normal female in some large unrecognized form.

The specimens named *rubella*, although distinct from *arcens*, resemble it very closely, even to the details of the oral organs. The form of the labium, as determined by a careful dissection, does not agree with Mr. Westwood's figure. His representation of the maxillæ (in which he has omitted the mando and galea) is more accurate. Both species have a posterior lateral spine on the thorax, and a compressed sharp spine directed backwards and placed along the middle of the abdominal peduncle, which has also a small lateral tubercle. In *rubella* the sternum is carinated, and has a spine upon each side of the carina, between the medial coxæ. The head is rather less contracted posteriorly than in *arcens*. The general similarity is sufficiently great to make the two species congeneric; and if Dorylus nigricans is taken as the male of *rubella*, it will be difficult to assign a male to *arcens* from among the described species of Dorylus. The abdominal peduncle of *arcens* is slightly smaller than in *rubella*, whilst the insect is rather larger, so that a Dorylus with a small peduncle may be the corresponding male: and among these D. glabratus *Shk.* might be chosen, as it is larger than *nigricans*. There is, however, too much discrepancy in the color to admit such a conclusion without hesitation, *arcens* being black. We are, therefore, inclined to regard Dorylus arcens as a black species with a large peduncle, yet to be discovered as a male. The last character is possessed by D. planiceps *Hald.*, which, although taken at Cape Palmas by Dr. Savage, is too small to correspond with *arcens*, and its color is lighter than in *nigricans*.

Dr. Goheen brought specimens of *rubella* from Monrovia, a locality 1500 miles distant from that specified by Dr. Savage.



Explanation of the figures.

Fig. 1, 2, head of Dorylus nigricans, the latter having the mandibles removed to show the absence of the mouth: 3, half of the head of a soldier: 4, mandible of a worker: 5, maxilla, and 6, half the labium, from a soldier of *rubella*; all magnified.

The Committee to which was referred the following paper by Prof. Haldeman reported in favor of publication in the Proceedings.

On several new Hymenoptera of the genera Ampulex, Sigalphus, Chelonus and Dorylus.

BY S. S. HALDEMAN.

AMPULEX *Jurine.*

§ Discoidal nervure having its origin near the posterior extremity of Romand's subdiscoidal recurrent nervure (discoidal of Shuckard), it curves forward and terminates in the cubital nervure beyond the 1st transverso-cubital near the middle of the 2d cubital area.

A. PENSYLVANICUS *Hald.* Black, somewhat glossy, sparsely punctulate; antennæ fuscous; mandibles and tibiæ dull rufous, tarsi paler: pronotum with the medial line impressed; alæ hyaline, external third dusky but becoming colorless towards the apex and centre, basal third varied with pale dusky: metanotum exarate, with 9 longitudinal ridges, between which there are short transverso sulci: abdomen polished. 5 lines long, expanse about the same.

Inhabits woods, taken in S. E. Pennsylvania in September. On account of the obliquity of the median recurrent nervure (Romand), the interior angles of the 1st discoidal and 1st cubital are acute, and similar. Radial and cubital nervures nearly parallel, the latter rectilinear.

SIGALPHUS *Latr.*

(TRIASPIS *Haliday.*)

S. TIBIALIS *Hald.* Dark fuscous: head, disk of the thorax, middle of the 1st and 2d segments of the tergum, exserted ovipositor, beneath and feet, *flavous;* eyes black: antennæ flavous, base and apex pale *fuscous;* vertex, a macula behind the eyes, and the posterior tibiæ and knees, *fuscous.* 2 lines long. S. E. Pennsylvania. The flavous portion of the abdomen extends from the base to the 2d impressed transverse line.

CHELONUS *Jurine.*

§ Eyes with hairs; 3 cubital areæ, 2d triangular, with the external apex truncate; abdomen coalite, without sutures.

CH. BASILARIS *Say.* Bost. J. Nat. Hist. 1, 266. S. E. Pennsylvania, in June.

CH. SOBRINUS. *Hald.* Black, scabrous: abdomen with a subbasal flavous fascia interrupted in the middle; surface minutely scabrous with a tendency to become sulcate towards the base; antennæ dark fuscous with the two basal articulations rufous: palpi and feet pale flavous; medial femora, and apex of the tibiæ pale fuscous; posterior coxæ, femora and tibiæ (except the base of both) dark fuscous: tarsi obscure toward the apex, posterior ones entirely so. 2 lines long. S. E. Pennsylvania, in June.

§ Eyes with hairs, 3 entire areæ, 2d irregular, abdomen coalite with 1 indistinct suture; metathorax with a spine upon each side.

CH. LUXATUS *Hald.* Black, scabrous, basal third of the abdomen pale flavous; tergum with numerous longitudinal sulci: mandibles and basal articulation of the antennæ rufous: feet flavous, apex of the tarsi black; exterior half of the posterior femora and of the tibiæ *black:* stigma black, nervures fuscous. 3 lin. long. S. E. Pennsylvania, in June.

The abdomen has a single transverse impressed line near the base, beyond which the flavous color extends in a convex lunar form.

DORYLUS *Fabr.*

§ Abdominal peduncle hemispherical, nearly the size of the succeeding segment; mandibles incurved, antennæ short.

D. PLANCIPES *Hald.* Glossy helvolus, fulvose pilose; wings faintly tinged; mandibles, base of antennæ, ocelli and feet *rufous;* eyes dark and prominent; hair long upon the head, thorax, apex and peduncle of the abdomen; mandibles wide at base, but narrowed upon the inside from the middle to the apex, which is well incurved, with the apex sharp and black. Long. 10, expanse 15, mandibles 1, antennæ 2 lines.

Presented to the Acad. Nat. Sci. by Dr. T. S. Savage, who brought it from Cape Palmas, W. Africa. The feet are very short and the femora much compressed. The antennæ are slender, subulate, with 14 articulations, of which the last is not readily distinguishable, the basal one is about one-third the entire length.

On leave granted, a paper was presented from Prof. S. F. Baird, of Carlisle, Penn., entitled, "Revision of the North American tailed-Batrachia, with descriptions of new genera and species," which being intended for publication in the Journal of the Academy, was referred to a committee, viz., Drs. Bridges, Hallowell and Leidy.

DONATIONS TO MUSEUM

In August, 1849.

August 7th.

Very fine specimen of Ardea alba, from Chester Co., Pa. From Mr. William Ayr, through Dr. Townsend.

Numerous specimens of Anatifa vitrea, in spirits, from Long Branch, N. J. From Mr. John Cooke.

Scutella (Echinarachnius) trifaria, from the same locality. From Mr. Samuel Powel.

August 21st.

Coluber venustus Hal., (C. occipito-maculatus Storer,) with five young, and Coluber vernalis, from Luzerne Co., Pa. From Mr. Peter Walker through Dr. Watson.

Mass of fossil Flustra from Long Branch, N. J. From Mr. Samuel Powel.

Two living specimens of Columba cyanocephala, and several insects, from Cuba. From Mr. John G. Howard, of Cuba, through Mr. Cassin.

Mounted specimen of Anas Rafflesii King, from Opelousas, La. From Dr. E. Pilaté, of Opelousas, through Mr. Cassin.

DONATIONS TO LIBRARY

In August, 1849.

August 7th.

Journal of the Academy of Natural Sciences of Philadelphia. New Series. Vol. 1. Part 3. 4to. From the Publication Committee.

Neue Wirbelthiere zu der Fauna von Abyssinien gehörig; von Dr. E. Rüppell. Folio. From Maximilian, Prince de Wied.

Circular, prepared by direction of the Secretary of the Navy, in relation to the Astronomical Expedition to Chili. By Lieut. M. F. Maury, U. S. N. From Lieut. Gilliss, U. S. N.

Two lectures on the connection between the biblical and physical history of Man. By Josiah C. Nott, M. D. From the Author.

Reports of the Smithsonian Institution, exhibiting the plans, operations, &c., to Jan. 1, 1849. From the Institution.

Proceedings of the American Association for the advancement of Science, at its meeting in Sept., 1848. From Dr. Griffith.

Catalogue of the Library of South Carolina College. From Dr. R. W. Gibbes.

Address delivered at the Anniversary Meeting of the Entomological Society of London, 22d of Jan., 1849. By William Spence. From Major McCall.

Dr. Wilson deposited the following:—

The Genera of Birds, by G. R. Gray. Part 48.

The Genera of Diurnal Lepidoptera. By E. Doubleday. Part 28.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 26.

The Annals of Natural History. Vol. 3. 2d Series. No. 17.

Phycologia Britannica. By W. H. Harvey, M. D. Part 41.

Conchologia iconica. By Lovell Reeve. Part 73.

Zeitschrift für Malakozoologie. Von R. T. Menké, M. D., und Dr. L. Pfeiffer. Nos. 8, 9, 10, for 1848.

The Geologist, for the years 1842 and 1843. Edited by George Moxon, Esq. 8vo.

Lehrbuch der Physiologie. Von R. Wagner. 8vo. 3 Nos.

Études progressives d'un Naturaliste pendant les années 1834 et 1835. Par Geoff. St. Hilaire (Étienne,) 4to.
Zoologia Adriatica; dell' Abate Guiseppe Olivi. 4to.
Anales di Ciencias Naturales. (Madrid) Vols. 1—7. 8vo.
Abbildung und Beschreibung der Fische. Von J. C. Heppe. 8vo.
Abbildungen naturhistorischer Gegenstände. Von J. F. Blumenbach. 8vo.
Genera des Insectes. Par E. Guerin et A Pescheron. 8vo.

September 4th.

Mr. Phillips in the Chair.

A letter was read from J. W. Dawson, Esq., of Pictou, Nova Scotia, accompanying a communication on the "Wheat Midge," as found in that country. The letter was referred to Dr. Leidy, Prof. Haldeman and Dr. Zantzinger.

Also a letter from the Rev. Thomas S. Savage, covering a communication entitled "Observations on the species of Termitidæ, of West Africa, described by Smeathman as *Termes bellicosus*, and by Linnæus as *T. fatalis*." Referred to Dr. Zantzinger, Prof. Haldeman and Dr. Hallowell.

September 11th.

Vice President **Morton** in the Chair.

On leave granted, the Committee to which was referred Prof. S. F. Baird's paper, entitled "Revision of the North American Tailed Batrachia," presented a report, recommending the same for publication in Part 4, New Series of the Journal, which was adopted.

A letter was read from the Secretary of the Imperial Society of Naturalists of Moscow, dated May, 1849, accompanying the donation of Nos. 3 and 4, for 1848, and No. 1 for 1849, of the Bulletin of that Society.

September 25th.

Vice President **Morton** in the Chair.

A report was presented from the Committee on Proceedings, in reference to the sales of copies of Say's American Conchology, effected since 1844, and the purchase made with the proceeds, of works on Conchology, for the Library, in accordance with the instructions of the donor, Mrs. Lucy W. Say.

The statement made in the present report and in a previous one in 1844, exhibited a total of $85.50 received since 1841, for copies of Say's Concholgy, and a total of $78.30 expended for works on Conchology added to the Library. The following is a list of the latter:—Donovan's British Shells, 5 vols.; Herrmannsen's Primordia (as far as published); Nillson's Hist. Mollusc. Sueciæ; Philippi's Enumeratio Mollusc. Siciliæ; Anton's Catalogue of Shells; Michaud's completion of Draparnaud; Morelet's Molluscs of Portugal; Poties and Michaud's 'Galerie des Mollusques;' Risso's Molluscs of Southern Europe; Beck's Index Molluscorum; Froriep's Mollusca; Müller's Index Molluscorum Groenlandiæ, and the last volume of the Brussels reprint of Deshayes' edition of Lamark.

The Committee to which was referred Mr. J. W. Dawson's communication on the "Wheat Midge" of Nova Scotia, reported in favor of publication in the Proceedings.

Notices of specimens of the Wheat Midge from Nova Scotia.

By J. W. Dawson.

This destructive little creature has, within the last four or five years, extended its ravages to Nova Scotia. It made its appearance first in the western counties, and has gradually extended its limits eastward. It is now found in every part of the Province, and has, in some districts, caused an almost total abandonment of wheat culture. The specimens accompanying this notice, were reared from the larva state; and as I believe this has not often been attempted with success, I shall shortly state the means by which they were obtained.

When I first became acquainted with this insect, I procured specimens of the full grown larvæ and placed them in a phial, with the view of observing their assumption of the perfect state in spring. None of them, however, appeared, and I subsequently learned that similar experiments had been tried without success; the belief among entomologists being, that the larva descends into the ground to complete its changes. I could not, however, ascertain that this belief had been confirmed by actual experiment or observation.

To satisfy myself on this point, (obviously of importance in reference to the means which may be devised for destroying these animals,) I obtained a fresh supply of the larvæ in that motionless and apparently torpid state in which they are found in the ripe wheat in autumn. In the month of November, a few dozens of these larvæ were placed on the surface of moist soil in a flower pot, in which a carnation was growing. In the course of two days they had, with the exception of a few which were crushed or otherwise injured, descended into the ground, leaving their delicate membranous cases on the surface. Their power of burrowing having been thus ascertained, they were allowed to remain undisturbed during winter, the spot where they had disappeared being covered with a glass shade. During winter the flower pot was watered as the growth of the carnation required.

A similar experiment having been tried in another pot, the insects were sought for in the ground after their disappearance. Very few were found, and these had still the larva form. They were, however, most flexible, and showed some degree of activity. On being placed on the surface, they endeavored to burrow, by means of a worm-like motion, and in doing so they seemed to have the power of fixing the anterior part of the body pretty firmly to the soil. They were found to have penetrated to the depth of about an inch. It thus appeared that the stiffness and torpidity of the larvæ in the ripe grain, are but temporary, and that when they fall from their place within the chaff scales, upon the moist ground, and cast their skins, they acquire the activity and strength necessary for penetrating into the soil, while still in the larva form.

The insects were not again seen until the last week in June, when they began to appear in the imago state, and as early as the tenth of July the whole had emerged. At that date there was no wheat in blossom in this vicinity, but the development of the insects had probably been hastened by the warmth and shelter of the house. The emergence of the midges appeared to take place in the evening, but was not actually observed. After they had taken wing, their pupa cases remained projecting from the ground, and were white and membranous. When examined by the microscope, they showed the true chrysalis form, the wings and other external organs being distinctly marked on them.

The remainder of the larvæ procured in autumn having been kept dry in a paper box, have lost their orange color, and appear to be quite dead, moisture being apparently absolutely necessary to their entering on the pupa stage.

The insects obtained in the above described manner, were of both sexes. The females agree in their characters with the figures and descriptions of the European *Cecidomyia Tritici.** The males, which I have not seen figured or described, are distinguished by their smaller size, differently formed abdomen, and longer and more hairy antennæ.

I am not aware whether the mode of hybernation of the wheat midge or "weevil," is generally known to farmers in the United States. If not, it is well worthy of attention, since, by cutting the wheat early, and carefully collecting the larvæ contained in the chaff, and dust separated from the grain, a large proportion of the ensuing year's brood may be destroyed. On the other hand, if the larvæ be allowed to be scattered over the fields or barn-yard, a plentiful supply of "weevils" for the next crop is secured. This method was proposed several years since by Prof. Henslow, but I have not been able to ascertain whether it has been used extensively in America.

The Committee on the following paper, by Dr. Savage, reported in favor of publication in the Proceedings:

Observations on the species of Termitidæ of West Africa, described by Smeathman as Termes bellicosus, and by Linnæus as T. fatalis.

By T. S. Savage.

Having read a condensed account and many extracts from the communication of Dr. Smeathman to the Philosophical Society of London, on the insect in question, it seemed to me that no room was left for the discovery of additional facts. But, residing in the locality of the Termes, I felt a desire to know personally their economy; first, from motives of interest in the general subject of Natural History; and secondly, in order to discover some way of preventing their supposed attacks on our buildings.

As I proceeded, I noticed some mistakes made by Dr. S., or his many copiers, which induced me to record my own observations. Of these the following is a summary.

I would here remark, that I have never seen the original nor entire publication of Dr. Smeathman's paper; but, what I have seen, is sufficient to show that he was an acute observer, a man of indomitable perseverance, and accurate to a remarkable degree. The best account that I have read of his paper, is that of Edward Newman, Esq., F. R. S., in his "Familiar Introduction to the History of Insects." It is free from the marks of a prurient imagination, and indicates more of a desire to relate the simple truth in the history of the insect, than any that I have seen. The figures, however, which stand at the head of his account, are decidedly bad.

---

* Curtis, Journ. of Agric. Society, England.

The first thing that strikes a visitor who is familiar with Adamson's and Smeathman's observations, when he arrives on the coast of Africa, is the great sparseness of the Termites' hills. Instead of "acres so thickly covered, as to appear like the huts of native settlements," his eye may wander over acres *without seeing one;* one cause of this sparseness may have arisen to some extent, from the introduction of civilization. The visitor usually lands first at the European or American settlement, where the hills in their immediate vicinity are mostly destroyed. This has been done, first, from the notion that the insect "ate down their dwellings;" and, secondly, from the superiority of the clay of which they are constructed, which is used for building purposes. At no point, however, between Cape Verd and the Gaboon river, will the stranger remark them for their numbers.

They more frequently occur on plane and flat lands; making their appearance especially soon after the lands have been cleared for planting, at which time trees are left girdled and prostrate to decay.

The features which first strike the beholder are their great size and form. These have been well represented by Smeathman, though two hills cannot be found exactly alike. Their contour is generally that of a hay-stack—the surface never regular, always marked with protuberances and upward projections, often not unlike "turrets," as termed by Smeathman.

Sometimes the hill presents the aspect of a mound having been worn down by the heavy rains, or, if in the vicinity of a village, by children playing upon it. In such cases they may be forsaken.

When they present distinct upward projections, or turrets, they are known to be in the process of enlargement. This is always the mode in which these insects increase their domicils. Turrets are projected one after another, and the intervening space filled out, so as to make a continuous surface. Within each of these turrets is a cavity which leads down as a passage, into the interior of the hill, or terminates in some other passage, keeping up a free communication throughout the structure. When hills present in their general outline the form of a hay stack, they have arrived at their maximum size. Their height in such cases is from 12 to 15 feet perpendicular measurement, the circumference at base from 50 to 60 feet; at two-thirds the height, or around the base of the "dome," from 30 to 40 feet.

The materials have for their base clay generally strongly tinged with oxide of iron in the recent state; after exposure to the sun and atmosphere, it takes on a light color, approaching a dull yellow, in some cases white. There is an admixture, more or less, of other subtances incidentally occurring, as gravel, leaves, straw, &c.

Sometimes the clay presents a dark, slaty aspect, which is incorrectly stated in books to be an indication of a different species of insects. This fact is owing to different colored clays, existing in different localities.

The strength of these structures is incalculably great; as an evidence of this, Smeathman states that they are often mounted by wild bulls, and four men were known to stand on one to spy a vessel at sea. But more than this, *they would* *sustain more wild bulls and men than could possibly mount them.* The particles of clay are cemented together by a fluid excreted from the mouth of the insect (not as Smeathman says, by gums elaborated from the different kinds of wood on which they feed). This, by exposure to the sun and atmosphere, becomes exceedingly hard and tenacious on the surface, added to which, the action of the well known principle in mechanical philosophy involved in the arched form of the structure, gives to it a vast degree of strength. This feature in the economy of the Termes fatalis—the strength of the domiciles—is a wise provision in nature. It guards the hills against the heavy, wasting rains of the country, and enables them to resist the shock of decayed falling trees, which so often occur on recently cleared grounds. When it is known that it is the practice of the natives of Africa not to plant the same piece of ground two years in succession, but let it lie fallow four or five years, and clear up a new spot every year, and as many trees are girdled and left to decay and fall, the wisdom of this feature will be understood.

On clearing away the shrubbery and grass around the base of a hill, several covered ways or clay tubes will be seen leading to neighboring stumps and decayed logs. These tubes, sometimes 12 inches in diameter at base, gradually diminish, ramifying, as they proceed outward. If their connection with the hill be broken, as many holes will be seen, constituting mouths of passages which run in a sloping direction to a depth of 12 or 18 inches under the domicil. These passages expand into basement rooms, bounded by clay pillars, supporting a series of arch-work on which rest the "cellular work," "royal apartments," and super-incumbent interior portions of the structure.

The exterior of the hill consists of a clay wall varying in thickness on the different sides from 6 inches to 1½ feet. Throughout this wall there are cavities, cells and passages, anastamosing and running from the base to the apex, forming a communication with the "dome." Within, at the base, elevated to a height of *one to two feet above the surface of the ground*, and central in respect to the circumference of the hill, is the apartment of the king and queen, styled by Smeathman "the royal chamber," surrounded by many other apartments or chambers, containing eggs and young of various sizes and stages of growth, all supported by the arch-work mentioned.

It will be observed, that Mr. Smeathman states that the "royal apartments" are on a level with the surface of the ground; but, *in every case*, I have found them elevated from one to two feet, depending on the height of the structure. Indeed, at certain seasons, this elevation becomes a matter of necessity in many localities. Were it otherwise, the royal pair would be in danger of inundation during the long and violent rains of that country.

Immediately above the royal apartments, extending across and up the sides of the hill, to about two-thirds their height, are the "nurseries" of Smeathman, a yellow, dry, comb-like, granulated substance, enclosed in moist red clay, so moist that it can be made by the hands into balls. In this substance are numerous narrow serpentine cavities, or cells, containing eggs and young in different stages. Scattered on the surface are perceived, in a recent state, many minute white globular fungi. Immediately above, and interior to the nurseries, lie the "magazines" of Smeathman, rising to the height of about a foot. These are a cellular arrangement of soft clay, filled with a dark-brown granulated substance, supposed by Mr. S. to be the "food." It is very moist, and appears to be vegetable substance, comminuted and reduced to this state by the insect.

Between the royal apartments and nurseries, is the first floor of Smeathman: immediately above the magazines, is the *second*, then comes the "dome," a large cavity in the upper part of the structure. With the dome there is a communication by numerous passages with the different parts of the hill, and thus a free circulation of warm air kept up, giving a uniform temperature to the domicil. The principles of philosophy known in the tendency of air to an equilibrium, its ascent when rarified, condensation and descent in coming in contact with a colder medium, thus securing a uniformity of temperature, are all involved in this peculiarity of structure.

The statement of Dr. Smeathman respecting the primary size and subsequent mode of increase of the royal apartments, is a matter of deduction, though undoubtedly correct. In small hills the queen is found of corresponding size. As the hills increase, the size of the queen and her apartments are known to increase. The adjacent portions must be taken down to meet this enlargement. This is true also of other portions of the structure. As the outer projections, or turrets, are sent up from within, and the intervening spaces filled out, a portion of what was previously the exterior, must be removed to admit of the expansion of the interior arrangements, the nurseries, magazines, &c. This change and removal must be more or less true also, of almost all parts of the domicil.

The community was divided by Smeathman into three orders; 1st, the workers, 2d, soldiers; 3d, the perfect insects, male and female, or king and queen; a fourth order, or state was subsequently noticed by Latreille among other species in the south of France, at Bordeaux,(Termes lucifigus.) It was afterwards observed in the East Indies, and incidentally noticed by an anonymous writer in manuscript on a Ceylonese species (Kirby and Spence's Introduct., 2d vol. 33 p.) This was the nympha or pupa state of the *workers* in which rudimental wings were observed. The same state was inferred and averred of T. fatalis, by Messrs. Kirby and Spence, and adopted by compilers. I have never known this inference to be confirmed by any observer, writing on the African species; but, I am happy in being able to assert the fact from personal observation, and, furthermore, to declare the *same of the soldiers*. I have seen both with rudimental wings distinct. Messrs. Kirby and Spence suppose the pupæ to be equally active with their respective larvæ, which is not the case; they are exceedingly delicate and sluggish.

Of these several orders, the laborers are by far the most numerous. They seem to be susceptible of two divisions—*larger and smaller laborers*. The latter exceed the former in numbers, and are found chiefly in the domicil. The work about the hill, such as constructing, repairing, bearing away the eggs from the maternal department, &c., seems to be done by them. Of the larger size, some few are found in the hill, but they exist in greater numbers in the covered ways, about and in the objects of plunder. The mandibles of this division are very hard and strong, and admirably adapted to the performance of what I suppose to be their part in the community, which is the comminuting of the different kinds of wood on which they prey, and the reducing of the clay from which their hills are made, to a portable condition. A like division of labor I have noticed among the Driver ants of Africa, (Anomma arcens, and A. rubella); Messrs. Kirby and Spence are incorrect when they say (Introduct., 2d vol., p. 40–41,) that "they carry in their mouths a mass of mortar half as big as their bodies, ready tempered, made of the finer parts of *gravel*, which, worked up to a proper consistence, hardens to a substance *resembling stone*, of which their nests are constructed." The amount each insect carries at a time, is so small as to be hardly perceptible to the naked eye. When the work is done, it presents a minutely granulated appearance, like that of the "nurseries." Nor is it already "*tempered*," ready to be laid. The insect, when it arrives at the place of deposit, stops for an instant, and retaining his hold on the piece of clay, undergoes a slight tremulous movement, more perhaps like the spasmodic action of vomiting, when *a fluid being seen to be excreted from the mouth* over it, the clay is deposited. This corrects the supposition of Smeathman, that the cementing medium was gum obtained from the trees on which they preyed. The outer surface of the work, when recent, presents a red, moist, granulated appearance, but when acted on by the sun and atmosphere, it approaches a dull white, or yellow, and is highly indurated, more so than simple clay dried in the sun can be. It however, falls far short of the hardness of stone; as the hill is penetrated, the clay becomes softer until the interior is found to be so plastic that it can be made into balls under the pressure of the hand. The young of this order are seen of all sizes: the *nymphæ* of Latreille differing from the others apparently in no respect but that of their rudimentary wings.

Soldiers.—Of this order, there seems to be ground for two divisions also, *larger* and *smaller*.

When a breach is made in the hill, the smaller soldiers are seen with the laborers in small numbers, and retreat with them to the interior. Then appear the larger soldiers, whose duty especially it is to defend the community. Their conduct, ferocious aspect, &c., have been well described by Smeathman, and need not be here repeated. It has been said, however, whether by Mr. S. or not, I cannot state, that in the act of biting, "they never quit their hold even though they are pulled limb from limb," (Kirby and Spence, Introduct., vol. 2, p. 40.)

This assertion has been correctly made of the Driver ants of Africa, (Anomma arcens and A. rubella,) but cannot be of the Termes fatalis. It is the habit of this insect to let go immediately after biting, and strike as fiercely at another place, doing this several times in quick succession. The manner in which its jaws operate, will not admit of a continued hold. Like scissors, (unlike the mandibles of the Anomma,) they cross each other, separating the fibres by a clear cut through.

In about fifteen minutes after the attack of the enemy, the work of reparation begins by the laborers, who, accompanied by a few of the smaller soldiers, and occasionally a larger, appear in great numbers. In view of the duty performed by these two orders, it is a surprising fact that both males and females are without eyes.

These at particular seasons, leave the hills in vast numbers. "The rains," as they are familiarly termed in Africa, begin in May, sooner or later, and continue with some intermissions until October. During the month of July, and sometimes extending into August, an intermission takes place under the name of "middle dries," dividing them into "early and latter rains." At the beginning of these seasons—"early and latter rains,"—the Termes *swarm* (if it may be so called.) in incalculable numbers. At their exit, so rapid is their ascent, that they present the appearance of smoke rising from all parts of the hill. The holes through which they escape, are temporary, created for this purpose, and closed when the *swarming* ceases. During this process, the atmosphere for many rods distant seems to be filled with them. Birds are then seen whirling and darting through the air in quick pursuit—all orders of insect-eating animals, are now on the alert. Barn yard fowls are seen to jump up several feet from the ground to catch them as they descend. Indeed, men as well as brutes, make them their prey. All tribes of Africans, however, do not eat them. The Grebos, who inhabit Cape Palmas, and among whom these observations were made, reject them as food. Why, it is difficult to tell, unless it be from the trouble attending their capture. It is not from any fastidiousness of taste, for they are known to eat snakes, toads, grubs, beetles, and even putrid meat, with zest. Tribes about fifty miles to the windward of Cape Palmas, use them as food. To catch them, bowls of water are set on the ground, into which they fall as their wings drop off. They are then roasted as shrimps, and the larger beetle (goliathi) are said to be equally sweet.

The individuals of the two sexes appear to be about the same size when they issue from the hill, *not exceeding half an inch*. The largest queen I have ever seen at the head of a community measured 4¾ inches in length.

Messrs. Kirby and Spence state that the queen lives but two years, which is incorrect. I have observed the yearly increase of hills for *five years* or more, and, when dissected, they have yielded a queen of corresponding size. To say that a successor to the original one might have been elected, would be gratuitous. Nothing is known of their habits to warrant such an assertion, while everything we do know goes to prove that they live for many years.

It is stated also, that but one queen is ever found in a hill. This, too, is incorrect. But one is generally found. I have known two to occur. They were contained in the same structure, called by Smeathman "the royal chamber," but separated by a septum of clay. The hill was of the usual size. It was "dug down" by a colonist at Cape Palmas, who, knowing that I was investigating the habits of the insect, kindly brought them to my residence. I regretted exceedingly my inability to decide the question which arose to my mind at first sight, "Is it a case of bigamy?" The person who discovered them took no notice, and was unable to say that he saw even one king. It occurred to me that it might be an anomaly. I therefore made inquiries at *Mont Serrado*, and the different European settlements that I visited, and ascertained that the same thing had occurred at those points, though it was considered quite unusual.

I am able here to confirm the truth of Mr. Smeathman's statement, that the king and queen are permanently enclosed in their apartment, which has been doubted by the eminent writer of the article *Termitidæ*, in the British Cyclopædia of Natural History, (understood to be J. O. Westwood, Esq.)

The sentence in which the doubt occurs, runs as follows: "The young queen of the hive swarms, is followed by a portion of the community; and the female after swarming, and the loss of her wings, is guarded by the worker ants; there is, therefore, so much analogy in these circumstances, that we are almost tempted to consider that Smeathman must have erred in stating that the working Termites imprison both the king and queen Termes. That it should be necessary for the latter to be carefully guarded, will be very evident; but why the king in his helpless and wingless state, (for we consider that the loss of wings is consequent upon and not precedent to pairing, should be shut up, seems questionable. We make these observations with hesitation, because Latrielle and Kirby and Spence seem to adopt, without hesitation, this statement of Smeathman."

I feel it my duty to notice particularly this doubt, coming as it does from a source of such high respectability as the present Corresponding Secretary of the London Ent. Soc., J. O. Westwood, Esq.

It should be remembered that in penning this doubt, Mr. W. was sitting within doors at Hammersmith, Eng., many thousand miles distant from the scene of Mr. Smeathman's patient and prolonged observation. Mr. S. states what he *knew to be a fact*, and, respecting which, I can see no way in which he could be mistaken. Mr. W. misapprehends a remark of Mr. Smeathman on their "swarming," if it can be so called. I do not understand Mr. S. to state that the queen is accompanied by any other individuals than those of the two sexes—other perfect *males and females*. He says that as *workers* are always to be found on the *surface of the ground*, the king and queen are *captured by them*, and thus made to become the heads of new communities. On what foundation *this* statement rests, I know not; but must confess that in this part of their economy I think there exists a lucuna yet to be filled. As to the statement, however, involving the perpetual imprisonment of the king and queen, I have no doubt. The facts respecting the structure of the "royal chamber" sufficiently prove it. Any one who has seen a fully developed queen, will say that she is incapable of progression, and the fact that no aperture has been discovered in the "chamber" among the many hills dissected at different seasons, sufficient to admit of the ingress and egress of the king, and hardly of the larger class of soldiers, must suffice.

It has been stated also by compilers of Smeathman, that the insect shrinks from light, which is a reason for their constructing covered ways. But, if it be remembered that the two orders—soldiers and workers—are perfectly blind, the assertion must appear to be gratuitous. The true cause of their erection of covered ways would seem to lie in the fact that the insect is a prey to a vast number of other insects, reptiles, &c.

Smeathman and others state that *Termes bellicosus* is the insect which devours dwelling houses, furniture, &c. This also I consider an error. I doubted its accuracy at the inception of my observations, and made inquiries subsequently of intelligent observers at Sierra Leone and Montserrado, all of whom confirmed me in my doubts. The white ants found in our houses, preying on our furniture, books, &c., are *smaller*, and larger in proportion to their breadth than *T. bellicosus*. The soldiers which accompany the laborers and found with them in their covered ways along the sills, floors and roofs of our houses, differ palpably in these respects from those of *T. bellicosus*. I made known my doubts on this point to my correspondent, Mr. Westwood, of London, proving the truth of my statement by specimens taken from my own dwellings, but, unfortunately, the bottles containing them were broken, and I failed of my object. I consider these *house eaters* as the *T. arborum* of Smeathman. One of their nests, indeed, I found in the roof of my office, and by them great damage was done to the building, besides many books were destroyed, having been eaten through and through. Another nest also was found in a small outbuilding; the insects of these two nests corresponded to those found in my dwellings, &c., while marked differences existed between the latter and *T. bellicosus*. I regret exceedingly that the steps to prove this opinion have failed in the manner above stated. I hesitate not, however, to assert it, confirmed as it is by other observers.

Hills dissected.

First hill opened 22d March, 1842. General outlines very much like those of a hay stack: situated in a valley.

Measurement.

Circumference at base, ...	34 ft.
" at ⅔ height from the base, . . .	25 ft.
Height from apex to base on the surface, . . .	13 ft.
" " " perpendicular, . . .	9 ft.

The work was begun with three men at 20 minutes past 4, P. M., and required 2½ hours to accomplish it.

The material was red clay obtained about two feet below the surface soil, the latter being a mixture of sand and decayed vegetable matter brought down from the surrounding hills. The surface was highly indurated, receiving a slight impression from a single blow of the mattock.

The order first seen was the workers, who instantly retreated on exposure to the external air. They were succeeded by one and then another, and then many of the larger class of soldiers, who, rushing out in great rage with jaws extended, threatened vengeance on the intruders.

The experiment of permitting them to bite was tried several times, when it was perceived that a drop of brownish fluid was exuded upon the part. The sensation was like that of a minute sharp cutting instrument, the jaws moving in cross direction like scissors.

On breaking several of the upward projections or "turrets," they were perceived to be hollow, leading into the "dome," and the main passages in the walls down to the basement. These several passages were smooth, as if by being well worn by constant tread, and it undoubtedly is through them that their food is brought from below to the "magazines." The first fragment of the hill exposed numerous apparent perforations, from the size of a shot to that of a dollar, which were increased by every stroke; these were the different passages, running in every direction and anastomosing with each other, keeping up a communication throughout the domicil.

The walls seemed to be about twelve inches thick, and contained numerous cavities or cells of various sizes and shapes, with young in different stages of growth, extremely white and delicate. They communicated with each other and with the main passages. The number of young contained in them varied from twelve to twenty. When several were found in one cell, they were regularly and closely packed, with their heads converging towards the bottom. The first idea which this arrangement presented to my mind, was that of pigs in an autumnal night, stowed in the angle of a "Virginia fence."

Having beaten away the wall of the hill, a layer of light brown spongy substance was seen, its structure irregularly cellular, and enclosed in red moist clay of corresponding form; the "nurseries" of Smeathman. The cells contained young of different sizes; on the surface were visible numerous scattered minute white globular bodies, probably fungi. Messrs. Kirby and Spence suppose them to belong to the genus *Mucor*. But the mucoridei are generated from decayed animal and stercoraceous matter. Without a microscopic examination, they seem to me to be assigned more naturally to the Trichocisti, perhaps *Trichia. the pin head fungi*, which are known to spring from decayed vegetable substance. It is highly probable that the material of which these nurseries are made, is at base vegetable matter. Their extent, as thus observed, is from the base to two-thirds the height of the sides of the hill. Centrally to these, and lying immediately under the floor of the "dome," was a series of cellular work, entirely of clay, filled with a chestnut-brown substance, very moist, having the appearance of rasped or gnawed wood, and other vegetable matter. These are Smeathman's "magazines," and "food," which, with the nurseries, constitute almost two-thirds of the contents of the structure.

Throughout the nurseries were found young in different stages of growth; those in the external cells were smaller and mostly without rudimental wings; those in the interior cells were larger, with distinctly developed mandibles, and rudimentary wings generally, the *pupæ of soldiers.* The young in the interior of this cellular work, with a few exceptions, were assuming the yellow color which marks the head and thorax of the workers and soldiers in their perfect or active state; the exceptions were of a pure white.

As the larger passages were opened, a strong current of warm air from within was perceptible. I attempted to look down the "dome," but was compelled to withdraw immediately, my respiration being affected, and the glasses of my spectacles coated with a film of moisture; a strong, peculiar, but not unpleasant, odor was perceived. It was observed, that the deeper we penetrated, the more numerous became the young, and the more advanced were they in growth.

The structure called the "royal chamber" by Smeathman was discovered in position central in respect to the circumference of the hill, and about eighteen inches above the surface of the ground. Around and beneath it, was a connected series of clayey cellular work, in which were found the young, as before stated. The *chamber* was of an oblong shape, rounded at the ends and sides; flattened and thick above and below. It was supported on one side by two pillars, about ¾ of an inch in diameter; on the other, it was attached to the surrounding clay work. I accidentally broke open the enclosure, being misled by the statement of Smeathman, that it was situated on a level with the surface of the ground. The queen was discovered, surrounded by a large number of the larger laborers, a few soldiers, and some of the more advanced pupæ, all of whom were running rapidly round her, manifesting the greatest perturbation. The queen made great efforts at progression, constantly turning her head and thorax from side to side, but without moving in the least her huge abdomen. Her whole length was 4½ inches. The king, evidently in great alarm, made repeated efforts to conceal himself under the abdominal folds of his consort.

On examining further the "royal chamber," a wide cavity was observed running horizontally along the upper part, or roof, externally, but without any signs of communication with the interior. On the under surface of the roof, or ceiling is a long depression, corresponding in shape to the body of the queen, which gives her that freedom of motion necessary to the extension of her eggs. This motion is compound, first in a longitudinal, then transverse direction, alternately elongating, contracting and widening her body, being marked with short, thick, transverse bands, the skin is thrown into folds, while these bands operate as so many fixed points, or centres of muscular action, forcing the eggs through their ducts to the place of exit.

For some time after exposure, the queen continued the expulsion of her eggs, but, not as I am inclined to think, to the usual extent. They were white and very minute, and left untouched by the workers, who evidently continued in a state of the greatest alarm.

The floor of the chamber was perfectly plane and smooth, exhibiting not the slightest impression from the body of the queen. The roof in the centre was

¾ of an inch thick; the floor about ⅝; at the line of conjunction about ⅛. Posteriorly in the line of junction, between the roof and floor was a small aperture, sheltered from above by a spur of clay running downwards, which was the only way discovered of ingress and egress. It could not have admitted an insect larger than the soldiers, and even to them, as it then appeared, it must have been a "strait gate." The king could not have passed, and consequently not the queen. It had the appearance of having been repeatedly closed and opened by collections of clay around it.

That the queen is enclosed for life, is evident from the fact that she is, from her great size, incapable of progression of herself, or of being transported by any means within the power of the community.

On clearing away the refuse at the base of the hill, the orifices of the main passages under the basement were discovered; descending in a sloping direction, they led to large vacant rooms, made by the pillars supporting the archwork; on which rests the interior of the structure. These pillars, or columns, were of an irregular, rounded shape, from ½ to 2½ inches in diameter, and stood on the solid ground about six inches high.

On visiting this hill the next morning, all the passages in that portion of the wall not dissected, were found well closed with fresh deposits of clay, and also a continuous layer spread over the remaining central cellular work. This was done during the night by the surviving members of the community for their protection against the cool air of the night, the rain, and hostile insects.

The opening of a hill is the signal for the gathering of all their foes,—ants, reptiles, &c.; hence the speedy closing of their various entrances, is a step of primary importance.

Another hill, previously dissected, was, after a time, so far repaired, as to be externally perfect. On taking it down again, though the cellular work was apparently restored, no queen was found, nor royal appartments; a few workers were all the insects discovered, and they were collected in the cells in the walls of the hill.

Hill 2d.—Opened Feb. 3d, 1847.

Circumference at base	26 ft. 10 in.
Height on the outer surface	8 ft. 6 in.

A diagonal section was made by a cross cut saw, beginning just below the upper floor of Smeathman.

The walls were much the thickest on the north side, nearly double those on the south, measuring 1½ feet through.

It being in a locality where sand and gravel abounded, these materials were freely mixed with the clay.

The covered ways leading from the base to objects of plunder at a distance, were in this case larger and more numerous than any I have seen before. The main one measured 12 inches in diameter, and gave off several branches, which proceeded in various directions. These were traced to sticks, stumps and logs, which afforded them prey.

In this case, the laborers in the hill were generally of the smaller class, while those in the covered ways and in the stumps were larger, having strong stout jaws, well adapted to the gnawing of wood. The "royal chamber" was found raised about 1½ feet above the level of the ground.

Hill 3d.—Circumference at base, 50 feet. Height, 14 feet.

The notes do not state whether this is the perpendicular height or not. Several fresh turrets were erected on the top, having a moist, deep red, granular appearance.

The structure called the "royal chamber," measured externally 10 inches in length, internally 8 inches. Its height from the level of the ground was 2 feet 8 inches. The length of the queen 4¾ inches.

Shrubs or small trees are frequently seen growing up through the hills. Such trees are never seen dead, consequently are not eaten by the insect.

On leave granted, Dr. John Neill presented an abstract of a paper written for the American Journal of Medical Sciences, entitled "Observations on the Occipital and Superior Maxillary Bones of the African Cranium." A peculiarity in the condyloid process of the occiput was pointed out, which is not generally noticed in works on Anatomy. It consists in a division of the process into two parts by a ridge or groove; showing a tendency in the basi-occipital bone of the fœtal, or young head, to be permanently retained. This peculiarity occurs oftener in the African than in any other head. In this respect there is an analogy to the lower orders of the vertebrata. The superior maxillary bone of the African head is also defective in a ridge which is continuous with the nasal process, and reaches to the anterior nasal spinal in the Caucasian head. In the African, the lower edge of the anterior nares is flat, and in this respect resembles the fœtal head, and the heads of inferior animals.

On leave granted, Dr. Morton made the following observations on the capacity of the skull in the different races of man.

Observations on the size of the Brain in various Races and Families of Man.

By Samuel George Morton, M. D.

I have great pleasure in submitting to the Academy the results of the internal measurements of six hundred and twenty-three human crania, made with a view to ascertain the relative size of the brain in various races and families of Man.

These measurements have been made by the process invented by my friend Mr. J. S. Phillips, and described in my Crania Americana, p. 253, merely substituting leaden shot, one-eighth of an inch in diameter, in place of the white mustard-seed originally used. I thus obtained the *absolute capacity of the cranium, or bulk of the brain, in cubic inches;* and the results are annexed in all those instances in which I have had leisure to put this revised mode of measurement in practice. I have restricted it, at least for the purpose of my inferential conclusions, to the crania of persons of sixteen years of age and upwards, at which period the brain is believed to possess the adult size. Under this age, the capacity-measurement has only been resorted to for the purpose of collateral comparison; nor can I avoid expressing my satisfaction at the singular accuracy of this method, since a skull of an hundred cubic inches, if measured any number of times with reasonable care, will not vary a single cubic inch.

All these measurements have been made with my own hands. I at one time employed a person to assist me; but having detected some errors in his measurements, I have been at the pains to revise all that part of the series that had not been previously measured by myself. I can now, therefore, vouch for the accuracy of these multitudinous data, which I cannot but regard as a novel and important contribution to Ethnological science.

I am now engaged in a memoir which will embrace in detail the conclusions that result from these data; meanwhile I submit the following tabular view of the prominent facts.

TABLE,

Showing the Size of the Brain in cubic inches, as obtained from the internal measurement of 623 Crania of various Races and Families of Man.

RACES AND FAMILIES.	No. of Skulls.	Largest I. C.	Smallest I. C.	Mean.	Mean.
MODERN CAUCASIAN GROUP.					
Teutonic Family.					
Germans,	18	114	70	90	92
English,	5	105	91	96	
Anglo-Americans.	7	97	82	90	
Pelasgic Family. *Persians,* *Armenians,* *Circassians.*	10	94	75	84	
Celtic Family. *Native Irish.*	6	97	78	87	
Indostanic Family. *Bengalees, &c.*	32	91	67	80	
Semitic Family. *Arabs.*	3	98	84	89	
Nilotic Family. *Fellahs.*	17	96	66	80	
ANCIENT CAUCASIAN GROUP.					
From the Catacombs. Pelasgic Family. *Græco-Egyptians.*	18	97	74	88	
From the Catacombs. Nilotic Family. *Egyptians.*	55	96	68	80	
MONGOLIAN GROUP.					
Chinese Family.	6	91	70	82	
MALAY GROUP.					
Malayan Family.	20	97	68	86	85
Polynesian Family.	3	84	82	83	
AMERICAN GROUP.					
Toltecan Family.					79
Peruvians,	155	101	58	75	
Mexicans.	22	92	67	79	
Barbarous Tribes. *Iroquois,* *Lenapé,* *Cherokee,* *Shoshoné, &c.*	161	104	70	84	
NEGRO GROUP.					
Native African Family.	62	99	65	83	83
American-Born Negroes.	12	89	73	82	
Hottentot Family.	3	83	68	75	
Alforian Family. *Australians.*	8	83	63	75	

The measurements of children, idiots and mixed races are omitted from this table, excepting only in the instance of the Fellahs of Egypt, who, however, are a blended stock of two *Caucasian* nations,—the true Egyptian and the intrusive Arab, in which the characteristics of the former greatly predominate.

No mean has been taken of the Caucasian race[*] collectively, because of the very great preponderance of Hindu, Egyptian and Fellah skulls over those of the Germanic, Pelasgic and Celtic families. Nor could any just *collective* comparison be instituted between the Caucasian and Negro group in such a table, unless the small-brained people of the latter division (Hottentots, Bushmen and Australians) were proportionate in number to the Hindoos, Egyptians and Fellahs of the other group. Such a computation, were it practicable, would probably reduce the Caucasian average to about 87 cubic inches, and the Negro to 78 at most, perhaps even to 85, and thus confirmatively establish the difference of at least nine cubic inches between the mean of the two races.[*]

Large as this collection already is, a glance at the Table will show that it is very deficient in some divisions of the human family. For example, it contains no crania of the Eskimaux, Fuegians, Californians or Brazilians. The skulls of the great divisions of the Caucasian and Mongolian races are also too few for satisfactory comparison, and the Sclavonic and Tchudic (Finnish) nations, together with the Mongol tribes of Northern Asia and China, are among the especial *desiderata* of this collection.

Among the facts elicited by this investigation are the following:

1. The Teutonic or German race, embracing, as it does, the Anglo-Saxons, Anglo-Americans, Anglo-Irish, &c., possess the largest brain of any other people.

2. The nations having the smallest heads, are the ancient Peruvians and Australians.

3. The Barbarous tribes of America possess a much larger brain than the demi-civilized Peruvians or Mexicans.

---

[*] It is necessary to explain what is here meant by the word *race*. Further researches into Ethnographic affinities will probably demonstrate that what are now termed the *five races* of men, would be more appropriately called *groups*; that each of these groups is again divisible into a greater or smaller number of primary races, each of which has expanded from an aboriginal nucleus or centre. Thus I conceive that there were several centres for the American group of races, of which the highest in the scale are the Toltecan nations, the lowest the Fuegians. Nor does this view conflict with the general principle, that all these nations and tribes have had, as I have elsewhere expressed it, a common origin; inasmuch as by this term is only meant an indigenous relation to the country they inhabit, and that collective identity of physical traits, mental and moral endowments, language, &c., which characterize all the American races. The same remarks are applicable to all the other human races; but in the present infant state of Ethnographic science, the designation of these primitive centres is a task of equal delicacy and difficulty. I may here observe, that whenever I have ventured an opinion on this question, it has been in favor of the doctrine of *primeval diversities* among men,—an original adaptation of the several races to those varied circumstances of climate and locality, which, while congenial to the one are destructive to the other; and subsequent investigations have confirmed me in these views. See *Crania Americana*, p. 3; *Crania Ægyptiaca*, p. 37; *Distinctive Characteristics of the Aboriginal Race of America*, p. 36; *Silliman's American Journal of Science and the Arts*, 1847; and my *Letter to J. R. Bartlett, Esq.*, in Vol. 2 of the Transactions of the Ethnological Society of New York.

4. The ancient Egyptians, whose civilization ante-dates that of all other people, and whose country has been justly called "the cradle of the arts and sciences," have the least-sized brain of any Caucasian nation, excepting the Hindoos; for the small number of Semitic heads will hardly permit them to be admitted into the comparison.

5. The Negro brain is nine cubic inches less than the Teutonic, and three cubic inches larger than the ancient Egyptian.

6. The largest brain in the series is that of a Dutch gentleman, and gives 114 cubic inches; the smallest head is an old Peruvian, of 58 cubic inches; and the difference between these two extremes is no less than 56 cubic inches.

7. The brain of the Australian and Hottentot fall far below the Negro, and measures precisely the same as the ancient Peruvian.

8. This extended series of measurements fully confirms the fact stated by me in the Crania Americana, that the various artificial modes of distorting the cranium, occasion no diminution of its internal capacity, and consequently do not affect the size of the brain.

ELECTION.

Francis P. Porcher, M. D. of Charleston, South Carolina, was elected a *Correspondent* of the Academy.

October 2d.

Dr. Bridges in the Chair.

Letters were read:

From the Royal Bavarian Academy of Sciences, dated Munich, Feb. 1, 1849, acknowledging the receipt of recent publications of this Society.

From the Secretary of the Lyceum of Natural History of New York, dated September 26th, 1849, acknowledging the receipt of the last number of the Journal of the Academy.

From Mr. A. H. Morse, of New York, dated Sept. 15, 1849, offering for sale a skeleton and skin of Manatus.

From Wm. F. Van Amringe, Esq., addressed to Dr. Morton, dated New York, Sept. 12th, 1849, proposing a new system of Zoological Classification, which was referred to Drs. Wilson, Leidy and Zantzinger.

October 9th.

Dr. McEuen in the Chair.

Letters were read:—

From the Secretary of the American Philosophical Society, dated Sept. 24th, 1849, acknowledging the receipt of No. 3, Vol. 1, Journal of the Academy.

From William Hembel, Esq., dated October 4th, 1849, accompanying his donation of 41 vols. of the Transactions of a London Society for the encouragement of arts, manufactures, &c.—received this evening.

Dr. Leidy offered the following observations:

From the opinion so frequently expressed that contagious diseases and some others might have their origin and reproductive character through the agency of cryptogamic spores, which, from their minuteness and lightness, are so easily conveyed from place to place through the atmosphere, by means of the gentlest zephyr, or even the evaporation continually taking place from the earth's surface; and from the numerous facts already presented of the presence of cryptogamic vegetation in many cutaneous diseases and upon other diseased surfaces, I was led to reflect upon the possibility of plants of this description existing in healthy animals, as a natural condition; or, at least, apparently so, as in the case of entozoa. Upon considering that the conditions essential to vegetable growth were the same as those indispensable to animal life, I felt convinced that entophyta would be found in healthy living animals, as well, and probably as frequently, as entozoa. The constant presence of mycodermatoid filaments growing upon the human teeth, the teeth of the ox, sheep, pig, &c., favored this idea, and accordingly I instituted a course of investigations, which led to the discovery of several well characterised forms of vegetable growth, of which at present, I will give but a short description, for the purpose of establishing priority, and propose giving a more detailed account of them, with figures, in the second volume of the Journal.

*Enterobrus,** *a new genus of Confervaceæ.* Simple, attached, isolated filaments, consisting of a long cylindrical cell, (containing protoplasma, granules, and large translucent globules enveloped in a primordial utricle,) with a distinct coriaceous peduncle or stipe of attachment, and at length producing at the free extremity one or two, rarely three, shorter cylindrical cells, (filled with the same matter as the parent cell.)

Enterobrus elegans. Filaments olive brown, brownish, yellowish, or colorless, at first forming a single apical turn, and then passing in a straight or gently curved line to the free extremity. Peduncle, or stipe of attachment, adhering very firmly, coriaceous, uniformly brownish, narrower than the frond cell, papillary, columnar, elongated, conical or pyramidal, expanded at base and at point of attachment to frond cell, marked with longitudinal lines, and frequently with transverse annular constrictions, with no definite interior structure. Length from 1-3750th to 1-400th of an inch; breadth 1-3200th to 1-666th. Frond cell much elongated, frequently reaching the length of 2 or 3 lines, uniformly cylindrical, excepting at free extremity, where it is usually clavate; breadth in full grown individuals pretty uniformly 1-935th of an inch. Contents consisting of a colorless protoplasma, with more or less numerous fine, translucent, yellowish or colorless granules, measuring about 1-15,000th of an inch, and numerous large, colorless, transparent globules or vesicles filled with fluid, averaging the 1-2870th of an inch in diameter. End cells only existing in full grown individuals, one, usually two, rarely three in number; the first one cylindrical, 1-86th of an inch in length by 1-1000th in breadth, filled with more granules and less globules than the parent cell; end cell clavate, 1-135th of an inch long by 1-750th broad, at the clavate end 1-638th, filled with granular matter and a few globules.

---

* Εντερον et Βρύον.

Length of full grown individual 2 to 3 sometimes 4 lines.

Habitat. Grows from the basement membrane of the mucous membrane of the small intestine of Julus marginatus, *Say*, occasionally from the same membrane at the commencement of the large intestine, and also from any part of the exterior surface of Ascaris infecta and Aorurus: entozoa infesting these portions of the intestinal canal of this animal.

The youngest individuals of Enterobrus which I ever detected, measured 1-380th of an inch in length by 1-1060th in breadth, but the most usual sizes vary from the 1-150th of an inch to the full grown individual. At all ages they contain the same character of contents, but in the younger ones, the large globules are usually predominant, sometimes to such an extent as to exclude the other matters. When quite young they are usually more or less clavate and straight, a little more advanced they form a gentle curve, about one-eighth of a circle. A little older, the distal half or third becomes uniformly dilated, and forms an obtuse angle with the other portion; after this as it continues growing, it usually forms a single spiral turn, becomes uniformly dilated, and thus advances to the full grown individual. The cell contents consist principally of large transparent globules with granules and protoplasma in the interstices. Frequently the cells are found distended with the globules to such an extent that the other matters almost, and occasionally even entirely disappear. Iodine turns the protoplasma and granules deep yellow or very deep brown, and causes the rupture of the globules, when a clear fluid is observed to exude; very slightly colored purplish, or undergoing no change of color from the iodine. Solution of iodine, acetic acid, salt water, or the prolonged action of water alone, causes a contraction of the cell contents from the sides of the permanent cell wall, but they are still held together by an apparent delicate membrane of the character of a primordial utricle. Frequently in dead individuals, the interior contents shrink to two-thirds, occasionally to one-third the diameter of the cell calibre, and almost 8 to 20 times the diameter of the cell from each extremity, when they have the appearance of a shrivelled granular membrane. In these latter cases the characteristic globules and granules have disappeared, and their place is more or less occupied with water, and yellowish globular, highly refractive bodies, which resemble oil. These latter globules vary in size from a mere point up to one-fourth the diameter of the cell. The smaller ones are contained within the shrivelled primordial utricle with a few of the larger ones, and a number of the latter occupy a position between the primordial utricle and the cell wall, apparently formed by a conjunction of the smaller globules and an exudation through the primordial utricle during the act of contraction consequent upon decomposition. They are insoluble in alcohol, but are soluble in ether and a solution of potassa; in fact in all their properties they resemble oil. Can these be oil globules, the result of decomposition?

The protoplasma or fluid of the cells is colorless or faintly yellowish, contracts or coagulates upon the application of alcohol, and is colored brown by iodine, having all the characters usually possessed by that albuminoid fluid found in all young vegetable cells and denominated protoplasma by H. von Mohl.

The clear granules are minute, yellowish and resemble fine oil globules. They are turned deep brown by the action of iodine.

The clear globules appear to consist of a delicate vesicular membrane probably derived from the primordial utricle, filled with a colorless fluid.

No circulatory or other movement as in Achyla prolifera, exists in the cell contents. The end cells of the full grown individuals are usually two in number and much shorter than the parent cell. Occasionally I have found three end cells, more frequently but one. These cells are formed from the parent cells, by a contraction first taking place in their contents with the primordial utricle, a partition from the permanent cell wall forming afterwards.

The end cells are probably spore cases; their contents are usually a dense mass of fine granules, similar to those of the parent cell, with a few intermingled globules. I never saw any movement, molecular or other, in the contained matter, except during decomposition.

A question may arise as to the true situation of this plant among the cryptogamia. I have placed it in the order Confervaceæ, from the diagnosis given by Endlicher, in his Genera Plantarum: "Fila capillaria, membranacea v. filamentosa, intus v. extus articulata, simplicia v. ramosa, libera (i. e. haud in frondem coalita,) interdum tamen reticulatim contexta, viridia v. rarius fusca aut purpurea, in formis infimis hyalina, etc."

Cladophytum,* *a new genus of entophyta allied to the Mycodermata.* Filaments minute, attached by means of a roundish nucleus, simple, or compounded near the base of attachment, with a minute lateral ramuli, inarticulate, and with no evidence of interior structure.

Cladophytum comatum. Filaments delicate, regular, colorless, simple, more frequently branched near the base at very acute angles, growing in more or less dense bunches from a yellowish rounded or oval, attached, nuclear body, varying in size from 1-7500th 1-600th of an inch. Lateral ramuli very minute, measuring in length from 1-15,000th to 1-3000th of an inch, and passing off at acute angles. No indication of articulation or interior structure.

Length from 1-666th to 1-120th of an inch.

Habitat.—Growing more or less profusely from the mucous membrane of the small intestine of Julus marginatus, occasionally from the same surface at the commencement of the large intestine, from any part of the exterior surface of entozoa infesting those cavities, and also from any part of the surface of Enterobrus elegans.

Arthromitus,† *a second new genus of entophyta, allied to the Mycodermata.*—Filaments always simple, cylindric, articulated, without ramuli, attached by means of a nuclear body, and with no evidence of interior structure.

Anthromitus cristatus. Filaments delicate, straight or inflected, growing in tufts usally of moderate density, from minute, attached, yellowish rounded or oval nuclear bodies. Articuli short, cylindric, uniform, measuring 1-9000th in. in length by 1-15,000th in breadth, with no traces of interior structure.

Length 1-375th to 1-40th of an inch, breadth 1-15,000th in.

Habitat.—Same as Cladophytum comatum, but rarely growing in such dense tufts.

The three genera of entophyta of which I have now spoken, are all so constantly found in the Julus marginatus, that I look upon it as a natural condition, and should I hereafter meet with an individual without them, I will consider it a rare exception, because, in one hundred and sixteen individuals which I have examined during the past thirteen months, in all seasons, and at all ages and sizes of from one up to three inches of the animal, I have invariably found them. It cannot be supposed that these are developed and grow after death, because I found them always immediately upon killing the animal. Whilst the legs of fragments of the animals were yet moving upon my table, or one half the body even walking, I have frequently been examining the plants growing upon part of the intestinal canal of the same individual. And upon the entozoa, these entophyta will be frequently found growing, whilst the former are actively moving about. I found among an ascaris three lines long, which had no less than than twenty-three individuals of Enterobrus averaging a line in length, besides a quantity of the other two genera growing upon it, and yet it moved about in so lively a manner that it did not appear the least incommoded by its load of vegetation. This specimen I have preserved in a glass cell in Goadby's solution, and exhibit it to the Academy.

---

*Κλαδος et φυτον. †Αρθρον et μιτος.

The animals were uniformly enjoying good health, i. e. all the organic and animal functions were natural; they eat, grew, reached their definite size, reproduced, and in fact, presented all those actions characteristic of the normal state of existence of the animal.

The genus Julus is an extensive one, and its species are found in all the great parts of the globe, and as their habits are the same, the conditions for the production of the entophyta will be the same, and I think I do not go too far when I say they will be constantly found throughout the genus in any part of the world, so that naturalists and others may, upon examination, readily verify or contradict the statements which I have this evening presented.

From these facts we perceive that we may have entophyta in luxurious growth within living animals, without affecting their health, which is further supported by my having detected mycodermatoid filaments in the cœcum of six young and healthy rats, examined immediately after death, although they existed in no other part of the body. These filaments were minute, simple, and inarticulate, measuring from 1-5000th to 1-1428th in. in length, by 1-16-000th of an inch in breadth. With them were also found two species of Vibrio.

Even those moving filamentary bodies belonging to the genus Vibrio, I am inclined to think, are of the character of algous vegetation. Their movement is no objection to this opinion, for much higher confervæ, as the Oscillatorias, are endowed with inherent power of movement, not very unlike that of the Vibrio, and indeed the movement of the latter appears to belong only to one stage of its existence. Thus, in the toad, (Bufo americanus,) in the stomach and small intestine, there exist simple, delicate, filamentary bodies, which are of three different kinds. One is exceedingly minute, forms a single spiral, is endowed with a power of rapid movement, and appears to be the Spirillum undula of of Ehrenberg; the second is an exceedingly minute, straight and short filament, with a movement actively molecular in character, and is probably the Vibrio lineola of the same author; the third consists of straight, motionless filaments, measuring 1-1125th in. long, by 1-15,000th broad; some were, however, twice, or even thrice this length, but then I could always detect one or two articulations, and these, in all their characters, excepting want of movement, resemble the Vibrio. In the rectum of the same animal, the same filamentary bodies are found, with myriads of Bodo intestinalis; but the third species, or longest of the filamentary bodies, have increased immensely in numbers, and now possess the movement peculiar to the Vibrio lineola, which, however, does not appear to be voluntary, but reactionary; they bend and pursue a straight course, until they meet with some obstacle, when they instantly move in the opposite direction, either extremity forward.

But it must not be understood that these facts militate against the hypothesis of the production of contagious diseases through the agency of cryptogamia. It is as well established that there are microscopic cryptogamia capable of producing and transmitting disease, as in the case of the Muscardine, &c., as that there are innocuous and poisonous fungi. But to suppose that they are the sole cause of contagious disease, is to doubt the possibility of other causes, such as a change in the chemical constitution of the atmosphere, the elements of our food, &c., and is as ridiculous as the psoric origin of most diseases of that miserable charlatanry denominated homœopathy. In many instances it is difficult to distinguish their character, whether as cause or effect, as upon diseased surfaces, in Tinea capitis, apthous ulcers, &c. In a post-mortem examination, in which I assisted Dr. Horner, a few weeks since, 28 hours after death, in moderately cool weather, we found the stomach in a much softened condition. In the mucus of the stomach, I detected myriads of mycodermatoid filaments, resembling those growing upon the teeth; simple, floating, inarticulate, and measuring from 1-7000th to 1-520th of an inch in length, by 1-25,000th of an inch in breadth. It is possible they may have been the cause of the softened condition; but I would prefer thinking that swallowed mycodermatoid filaments from the teeth, finding an excellent nidus in the softening stomach, rapidly grew and reproduced themselves. In the healthy human stomach these do not exist.

In the stomach of a diabetic patient, I found so very few that they probably did not grow there, but were swallowed in the saliva.

Dr. Leidy, after exhibiting numerous drawings of the entophyta described by him, and also specimens, beneath the microscope, growing from the mucous membrane of the small intestine of Julus, and from the exterior surface of entozoa infesting that cavity, proceeded to exhibit and describe some new genera and species of entozoa, as follows:

1. *Ascaris cylindrica.* Body nearly cylindrical throughout, anteriorly moderately attenuated: tail curved, 1-214th of an inch in length from the anus, œsophagus elongated, gibbous in the middle, with the œsophageal bulb and pharynx 1-100th of an inch in length; œsophageal bulb pyriform, 1-75th of an inch in diameter; ventricle or intestine somewhat tortuous, cylindrical, dilated at both extremities; rectum pyriform; female generative aperture about half way between the mouth and tail. Whole length 4-5th of a line, breadth 1-12th of a line.

Habitat.—Small intestine of Helix alternata.

Remarks.—I found the female only of this species in fifteen out of forty specimens of Helix alternata, in numbers of from one to three. The ovaries in all were distended with ova, the latter measuring 1-430th of an inch in length by 1-576th in breadth.

2. *Ascaris infecta.* *Female*, subcylindrical gradually diminishing towards the extremities, white, with a brown streak down the lower two-thirds of the middle line; anteriorly obtusely rounded; tail slightly curved, 1-80th of an inch long from the anus. The three papillæ of the mouth projecting; œsophagus strongly

muscular, thick, oblong, pyriform, 1-80th of an inch long, greatest breadth 1-175th of an inch; œsophageal bulb, cordiform, 1-166th of an inch long, by 1-66th of an inch broad; ventricle slightly dilated at commencement, contracted posteriorly; generative orifice projecting, just below the middle of the body. Vagina furnished with a large ovate seminal receptacle.

Male, dilated at both extremities; tail thick, 1-174th of an inch long, furnished upon its inner aspect with two minute tubercles. Above the anus are two rows, each of four tubercles, connected by delicate folds of integument. Œsophagus 1-111th of an inch long, by 1-260th of an inch broad; œsophageal bulb depressed cordiform 1-214th of an inch long, by 1-250th of an inch broad. Penis formed of two curved spiculæ, measuring in length, in a straight line, 1-78th of an inch.

Length of adult female, 3 to 4½ lines; breadth at origin of ventriculus 1-123d of an inch; middle of body 1-83d to 1-60th of an inch; just above anus 1-144th of an inch. Ova 1-319th of an inch long, by 1-428th inch broad.

Length of male 2 lines; breadth at origin of ventriculus 1-176th of an inch; middle of body 1-211th of an inch; just above anus 1-202d of an inch Spermatophori oval, 1-1391 inch long, by 4-1666th inch broad, with spermatozoa 1-3750th inch long, by 1-10,000th inch broad.

Habitat.—This species is found in numbers of from three up to fifty or more, of various ages and sizes, pretty constantly in the small intestine of Julus marginatus, Say. The males are found in the proportion of about one in eight.

Aorurus,* *a new genus of Nematoideæ.* Body cylindrical, strongly annulated, with a tail nearly as long as the body, straight, or nearly so, inflexible, spiculate, ensiform, shining, and pointed. Mouth unarmed. Female generative aperture near the middle of the body.

Remarks.—This genus is divisible, by several well marked characters, into two distinct sub-genera.

1st sub genus. Streptostoma.†—Body cylindrical, very strongly marked with broad annuli. Mouth moderately large, round, bordered by a collar, (formed by the second annulus projecting beyond the general outline of the body.) Œsophagus divided into two distinct pyriform muscular bulbs, with a small intermediate rounded bulb. Tail four-fifths the length of the body.

Streptostoma agile. Female.—Body larva-form, cylindrical, narrowed anteriorly and posteriorly, opalescent white, divided into from sixty-one to eighty-eight broad annulations, of which there are twenty-one from the mouth to the commencement of the ventriculus. Tail very straight, occasionally slightly sigmoid, or bent at the point, narrow and sharply pointed, inflexible and brittle. Mouth moderately large, round, projecting; pharynx almost null; œsophagus consisting of three bulbs: the first elongated pyriform, strongly muscular, measuring 1-197th in. long, by 1-319th in. broad; second bulb small, rounded, muscular, 1-882d in. long, by 1-882d in. broad; third, or true œsophageal bulb, pyriform, 1-294th in. long, by 1-312th in. broad. Ventriculus dilated at commencement to nearly the diameter of the body, afterwards straight and cylindrical to near its termination, where it is slightly dilated. Rectum elongate, pyriform. Generative aperture situated about twenty-four rings above the anal aperture, which latter is placed between the last two annuli of the body. Ovary double; ova 1-333d in. long, by 1-400th in. broad.

---

* Αορ et ουρα.

† Στρεπτὸς et στομα.

Length of body from 1-13 to 1-11th inch; breadth at commencement of ventriculus 1-118th inch; at middle of body 1-97th inch. Tail from 1-16 to 1-15th inch long, by 1-888th in. broad at its middle.

*2nd sub-genus.—Thelastoma.**

Body cylindrical, attenuated anteriorly, strongly marked with moderately broad annuli. Mouth small, opening at the extremity of a small papilla. Œsophagus divided into two distinct portions, the first long and cylindrical, the second constituting the true œsophageal bulb. Tail more than half the length of the body.

Thelastoma attenuatum.—Female. Body attenuated anteriorly to commencement of the ventriculus, opalescent white, divided into from 140 to 160 annulations, of which there are from fifty-two to fifty-seven from the mouth to the commencement of the ventriculus. Tail very straight, or very lightly curved or bent, slender, inflexible and brittle, and sharply pointed. Mouth always projected, small, surmounting a small papillary elevation formed by the first annulus of the body. Pharynx very short and narrow; œsophagus strongly muscular, cylindrical, 1-47th in. long, by 1-533d in. broad; œsophageal bulb pyriform, 1-178th in. long, 1-222d in. broad. Ventriculus dilated alæform at commencement, cylindrical throughout. Rectum short, pyriform. Generative aperture 42 annulations above the anal. Ovary double, ova 1.333d in. long, by 1.400th in. broad.

Length of body from 1-10th to 1-8th in.; breadth at middle 1-95th in. Tail 1-15th in. long, by 1-111th in broad at middle.

Habitat. and Remarks.—Streptostoma agile and Thelastoma attenuatum are found together principally in the commencement of the large intestine of Julus marginatus, in numbers of from one to fifteen, and less frequently in the small intestine with Ascaris infecta, in numbers of from one to six. It is remarkable, that although I have found from one to fifteen of these two genera, in nine-tenths of the animals examined, I have never yet been able to detect a single male.

Thelastoma always has the mouth projected, whilst Streptostoma has it retracted, producing, in some measure, but by no means wholly, the difference in size of the oral aperture.

At first I was inclined to think these two animals were different stages of the same species, but the adults uniformly correspond to the descriptions given, and in all cases contained more or less perfected ova.

Their movements are active, wriggling the body in a sigmoid manner and vibrating the delicate spiculated tail, which in sun-light resembles a shining acicular crystal.

Thelastoma, from its form of œsophagus and narrower annulations and shorter tail than Streptostoma, occupies a position between the latter and Oxyuris.

Gregarina Dufour.

Body consisting of two distinct cells. Inferior cell the larger, marked with delicate, parallel, longitudinal lines, (muscular?) and filled with a fine granular matter, obscuring one or two nucleolo-nucleated-organic cells. Superior cell placed in a depression of the inferior, surmounted by a slight papilla in which may be detected two lines, apparently outlines, of an oral cana to the interior of the cell which is filled with granular matter; cell wall amorphous and transparent.

---

* Θηλή et στόμα.

Gregarina larvata. Body opaque white, cylindrical or fusiform, frequently considerably dilated at the middle of the upper third. Superior cell a flattened or depressed sphere, received about one-half into a depression of the inferior cell, surmounted by a papillary elevation with traces of a communication with the exterior; interior filled with a finely granular mass resembling oil globules, and measuring from 1-15,000th to 1-7,500th in. Length of cell, in smallest individuals 1-123d in.; in largest 1-80th by 1-61st in. broad. Inferior cell elongated, cylindrical or fusiform, not communicating with the exterior nor with the interior of the superior cell; filled with a mass of granules resembling that of the superior cell, rendering the larger individuals opaque, but translucent in the smaller ones, and usually obscuring one or two comparatively large nucleolo-nucleated-organic cells, measuring from 1-888th to 1-308th in. in diameter. Cell-wall marked with exceedingly regular, delicate, longitudinal, parallel lines about 1-9375th in. apart, apparently muscular in character.

Length from 1-160th to 1-30th in., by 1-830th to 1-111th in. in breadth.

Habitat.—Found in numbers of from half a dozen to over a hundred, in the ventriculus of Julus marginatus.

Gregarina is probably the larva condition of some more perfect animal, but in the 116 individuals of Julus which I have examined, I have not been able to detect any form which could be derivable from it. Creplin doubts its animality.[*] When I first discovered this body, thinking it to be a larva, I did not examine it carefully, and it was not until some time afterward when, being desirous of ascertaining its true nature, upon examining some fresh specimens beneath the microscope, I detected movements of an animal character, and this led me to seek for muscular structure, which resulted in the discovery of the longitudinal lines of the inferior cell. These escaped the observations of Siebold, for he says, "Nach meine Beobachtungen bestehen die Gregarinen aus einer harten glatten den Eihüllen der Insekten-Eir ähnlichen Haut."[†] The movements of the animal are exceedingly sluggish, and consist of a very slow bending in any direction of any part of the inferior cell, most usually above the middle, rarely at the inferior extremity, but most frequently near the superior cell which is entirely passive. The superior cell is also frequently drawn or contracted within the inferior, and again protruded by the contraction of the latter, and the propulsion of the granular contents against it. The inferior cell is also frequently, more especially in younger individuals, intussuscepted within itself through a partial contraction; and again relieved by a general contraction of the cell.wall.

---

[*] Nachträge zu Gurlt's Verzeichness der Thiere bei welchen Entozoen gefunden worden sind. Wiegmann's Archiv, 1846, 1 Band, S. 157.

[†] Wiegman's Archiv, 1838, 2 Band, S. 308.

In the state in which Gregarina is found, it would probably hold a rank between the Trematoda and Trichina the lowest of the Nematoidea.

Nyctotherus,[*] *a new genus of Polygastrica, allied to Plesconia.*—Body ovate, dilated posteriorly, compressed anteriorly, granulated, longitudinally lined, with an apparent operculum covering its anterior half, and having a semi-circle of cilia just within its margin inferiorly and posteriorly. Centre of the operculated portion furnished with a large trapezoidal finely granular areola. Posterior part of the body with a short fissure passing inwards and downwards.

Nyctotherus velox.—Body white, ovate, conoidal, anterior margin rounded, obtuse; posteriorly acute. Posterior margin of the apparent operculum passing in a curved line upwards upon the middle of the body to within a short distance of the back, and furnished inferiorly with a point projecting backwards. With a line passing down from the back about the middle of the operculum of the trapezoidal areola, giving the part of the body anterior to this the appearance of a head. Trapezoidal areola, with curved sides, finely granular. Posterior fissure communicating with the exterior, just above the acute termination of the body, and passing inwards and downwards, resembles an anal aperture. Areolæ of the interior sarcous mass generally minute, one large and round pretty constantly to be observed at the inner termination of the posterior fissure.

Length from 1-254th to 1-80th in.; breadth from 1-320th to 1-254th in.

Habitat.—Commencement of the large intestine of Julus marginatus, often found in considerable numbers.

Remarks.—This genus is closely allied to Plesconia, but possess no appendages excepting the semi-circle of cilia, just within the edge of the apparent operculum.

The animal swims in water with great ease and grace. After being in this fluid some time, the external investment bursts, and allows the protrusion of globular masses of sarcous matter, as in Leucophrys, but not to such a great extent.

Note.—Since the above went to press, Dr. Leidy announced to the Academy that he had discovered two new species of the entophyte Enterobrus; one of them E. spiralis, 1-69th inch long, growing in the small intestine of Julus pusillus; the other, E. attenuatus, 1-24th inch long, growing more or less profusely with a second species of Cladophytum, C. clavatum, in the ventriculus of a coleopterous insect, Passalus cornutus. Thus has been established the law "that plants may grow in the interior of the healthy animal as a normal condition," and a new field has been presented for the investigation of the Cryptogamo-naturalist. [See forthcoming number of the Proceedings.]

October 16*th*.

Mr. Pearsall in the Chair.

Mr. Cassin read a paper describing some new species of Birds, of the family of Caprimulgidæ, specimens of which are in the collection the color to the glandular bodies. The reservoir also is lined with cells. In Upis Pennsylvanica they are brownish, or nearly colorless, measure the 1-750th inch in diameter, contain some finely granular brownish matter, and a large round or oval, translucent, faintly granular nucleus, measuring 1-1250th inch, with a large, round or oval nucleolus 1-2727th inch in diameter.

---

[*] Νυκτοθηρας.

The secretion of the glands of Julus marginatus contained within the interior of the body, is deep yellow in color, and contains a few of the purplish granules of the cells. It resembles oil in consistence, but is soluble in water and alcohol. It is neither acid nor alkaline, evaporates at a temperature of 250° F., without residue; is acrid to the tongue; Schneiderian membrane, and conjunctiva, smells like iodohydric acid, and stains the cuticle brown. The last two properties led me to suspect the existence of iodine, but the usual reagents presented none. It probably belongs to a class of peculiar organic compounds, found in the odoriferous principles of animals, not yet investigated.

Exteriorly the reservoirs of the odoriferous glands of insects are furnished with transverse muscular bands, of a brownish color, about 1-1578th inch in breadth, and separated by wide intervals.

In Julus, the body of the glands posesses no distinct muscular bands, but the neck is provided with them.

References to the plate.

Fig. 1. Represents one of the odoriferous glands of Julus marginatus, much magnified, exhibiting the secreting cells on the interior surface of the body, and the muscular bands of the neck.

Fig. 2. Represents some of the secreting cells, highly magnified. *a*, cells in which the nucleus is concealed from the quantity of granular matter; *b*, nucleus; *c*, cells in outline.

Fig. 3. Three secreting cells very highly magnified. *a*, nucleus concealed by granular contents; *b*, a cell burst with a portion of the contents escaping.

October 30*th.*

DR. BRIDGES in the Chair.

The Committee on Mr. Cassin's descriptions of new species of Caprimulgidæ, reported in favor of publication in the Proceedings.

Descriptions of new species of birds of the Family Caprimulgidæ, specimens of which are in the Collection of the Academy of Natural Sciences of Philadelphia.

BY JOHN CASSIN.

Genus HYDROPSALIS, *Wagler*, Isis, 1832, page 1222.

1. *Hydropsalis limbatus*, nobis.

Adult ♂ ? *Form.* Wings long, pointed, with the shafts of the primaries strong and slightly curved; first primary longest, second and third deeply sinuated on their outer webs, and, with the first, having their external margins distinctly serrated. Tail excessively long, graduated, the two external feathers surpassing the next by about 14 inches; others regularly receding to the two in the middle, which are shortest. Tarsi feathered slightly below the knee. Webs of outer tail feathers narrow.

Dimensions.—Total length of skin, from the tip of bill to end of tail about 2 feet 5 inches, of the wing 9 inches, of the tail to end of external feathers, about 22 inches; length of two middle tail feathers about 3 inches.

Colors.—Upper surface of the head, body and wing coverts brownish black, spotted and sparingly lined with pale fulvous. The wing coverts with round spots at their points of the same color.

Superciliary region grayish white, every feather having narrow irregular lines of black. Hind neck with a semicollar of bright and reddish fulvous. Under the eye an irregular whitish stripe.

Scapular feathers with their external webs black, with a few curved lines of fulvous remote from the tip, which is broadly margined with black, internal webs of scapulars nearly white irregularly striped and spotted with black; other scapulars nearly black, with pale fulvous margins externally.

Throat before with a white collar. Chin, breast and belly irregularly mixed with brownish black and pale yellowish white, the latter color assuming upon the breast the form of semicircular segments and lunular spots upon the tips of the feathers, and the former (blackish) disposed to form very irregular narrow bands upon the flanks and belly; ventral region and under tail coverts paler.

Quills brownish black, having upon their internal webs four or five narrow transverse lines of pale yellowish white, conspicuous when viewed from below; and upon their external webs (except the first) several rounded or irregular shaped spots of the same color. Second and third quills were sinuated upon their outer webs, with a very slight margin of white. Secondaries obscurely tipped with whitish.

First, second and third tail feathers throughout their whole length with their outer webs and about two-thirds of their inner webs brownish black,—other portion of the inner webs, being the internal margin of those feathers, white; a few bright fulvous spots near the base upon the outer webs. Fourth and fifth tail feathers with similar colors, but more broadly bordered with white, which upon those, as well as the third, is sparingly spotted with brownish.

Young ♀? *Form.*—Tail deeply emarginate, but not excessively long, external feathers exceeding the next by about 1½ inches only.

Dimensions.—Total length of skin, from tip of bill to end of tail about 12 inches, wing 8 inches, tail to end of external feathers 7½ inches; length of middle tail feathers about 3½ inches.

Colors.—Entire upper surface, tail included, brownish black, with numerous rounded spots and lines of reddish fulvous, assuming upon the tail the form of irregular or curved bands, which are more or less mottled and mixed with the brownish black of the other predominating portion. Throat with a semi-collar of yellowish white. Entire under parts, brownish-black, banded and spotted with fulvous.

Hab.—South America.

Obs.—This very remarkable species may readily be distinguished by its very long forked tail, the feathers of which are irregularly graduated. In the latter respect it differs from the *Hyd. psalurus*, (Temm.) to which, however, it bears but little resemblance.

There are in the collection of the Academy three specimens of this species, two males in the Rivoli collection, and a female which was fortunately procured in Paris by Mr. Edward Wilson.

2. *Hydropsalis segmentatus* nobis.

♂ middle age? *Form.* Wings moderate, second primary slightly longest second, third and fourth deeply sinuated on their outer webs; first with its outer edges serrated, inner edges (of primaries) presenting a fringed appearance. Shafts of primary quills strong and curved.

Tail very long, the two external feathers of which surpass the next by about 10 to 12 inches; second, third and fourth graduated; fourth and fifth about equal—that is to say, the four middle feathers of the tail nearly equal.

Bill rather long and slender. Tarsi bare, slender. Webs of outer tail feathers very narrow.

Dimensions.—Total length of skin from tip of bill to end of tail about 20 inches, wing 6¾, tail to end of external feathers about 15½ inches; length of four middle tail feathers about 4 inches.

Colors.—Upper surface of head, body, scapulars and wing coverts brownish-black, spotted and obscurely lined with ferruginous rufous, which color almost predominates upon the scapulars.

Neck, behind, with an obscure ferruginous semi-collar, before, with a semi-collar of rufous white. Body beneath, brownish black, with rounded ferruginous spots upon the breast, and upon the belly with obscure bands and spots of pale ferruginous and nearly white.

Wing feathers brownish-black; first primary with a narrow pale reddish border upon its outer web for about half its length, second and third with a pale ferruginous spot at the point of sinuation. Secondaries with irregular bars of reddish and with narrow tips of the same color.

The two external feathers of the tail with their shafts white upon the upper surface, outer webs white, tinged with rufous, and handsomely marked (upon the outer webs) with semicircular segments of black, having for their bases the shaft of the feather. This marking is more conspicuous towards the base, and upon the under surface the black color of these semicircular segments extends to the shaft of the feather. All the other tail feathers brownish black, with bars of ferruginous rufous; upon the two middle feathers these bars are mottled with black.

Young ♀? *Form.*—Tail ample, emarginate, and regularly graduated, the two external feathers being but little longer than the second.

Dimensions.—Total length of skin, from tip of skin to end of tail about 9 inches; wing 6¼; tail to end of external feathers, about 5 inches; length of middle feathers of the tail, about 4 inches.

Colors.—Entire plumage very similar to the male, but with all the tail feathers brownish black, barred with ferruginous.

Hab. Bogata, New Grenada.

Obs. The two specimens now described belong to the Rivoli collection, and have the appearance of being either young birds, or with the plumage of winter. The male may, however, be easily recognized by the curious marks upon the external webs of the outer tail feathers, described above. The colors in the present specimens, black and ferruginous, are peculiar to this species, so far as I have seen.

Genus Antrostomus, *Gould.*

3. *Antrostomus serico-caudatis*, nobis.

Adult ♂. *Form.* Wings rather long, third primary longest; second, third and fourth sinuated on their outer webs; shafts slightly curved. Tail cuneiform, four middle feathers equal and longest.

Bill rather long and flat; tarsi short, slightly feathered below the knee,

Dimensions. Total length of skin, from tip of bill to end of tail, about 11 inches; wing 7¼; tail 5¾ inches.

Colors. Head above, back, rump, scapulars and wing coverts variegated with black and dark fulvous, the latter in rounded spots and narrow irregular lines, predominating upon the wing coverts, but the former (black) upon the head and scapulars. This color disposed to form a broad longitudinal band on the head. Sides of the head, over the eyes, grayish; every feather with transverse black lines. Neck behind with a semi-collar of deep reddish fulvous; before, with a semi-collar of yellowish white, the feathers of which are tipped with black.

Throat nearly black, breast below the collar, with deep fulvous spots and irregular lines, belly and ventral region with a predominating pale fulvous white, and some nearly pure white spots, every feather transversely lined and barred with black, under tail coverts fulvous, unspotted.

Wing feathers brownish black, primaries with about 10 to 12 irregular shaped but rather triangular marks of deep fulvous upon their external webs, secondaries with irregular bars of pale fulvous, which bars are mottled with black.

First, second and third feathers of the tail brownish black with several obscure and badly defined bands of reddish fulvous, and obliquely tipped in a very conspicuous manner, with fine, silky white. Fourth feather of similar color, and without the white tip, and with the reddish fulvous bands more definite. Two middle tail feathers brownish black, and with about 10 to 12 bars on each web of deep reddish fulvous, well defined, and which are disposed obliquely from the shafts of the feathers, like a pinnate leaf, those bars broad and mottled with black,—two middle feathers without white tips.

Younger? *Form.* As above described, but with the second primary slightly the longest.

Dimensions. Total length of skin from tip of bill to the end of tail, about 10¾ inches, wing 7¼. tail 5½ inches.

Colors. Very similar to the above, but with the grayish color extending over the whole of the head. Under parts much darker but with more numerous white rounded spots. Under tail coverts fulvous with black lines. The fine white tips of the external tail feathers tinged with fulvous.

Hab. South America.

Obs. The distribution of the colors upon the upper surface of the body, in this handsome species resembles in some degree that of *Scolopax rusticola*, or of *S. minor*.

It is not similar to any other species known to me, and can at once be recognized by the silky white tips of the external tail feathers. These cross the feathers obliquely, and are so arranged that when the cuneiform tail is expanded, they form a contiguous margin upon the ends of those three feathers.

This is one of the few species of this family which have pretensions to beauty. Two specimens are in the collection of the Academy.

ELECTION.

Octavius A. Norris, and Francis W. Lewis, M. D., of Philadelphia, were elected *Members* of the Academy.

Fig 1

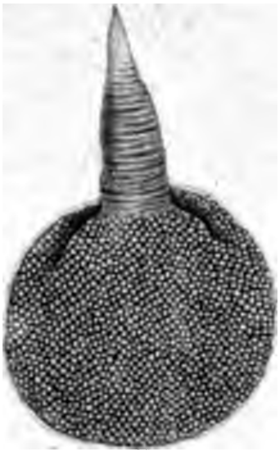


Fig 4

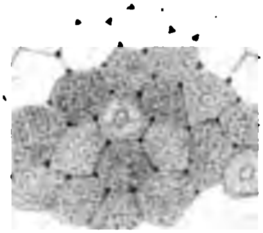


Fig 3

16

Fig 1

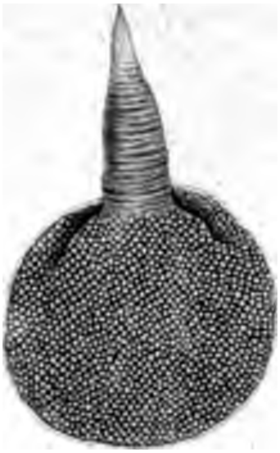


Fig 2

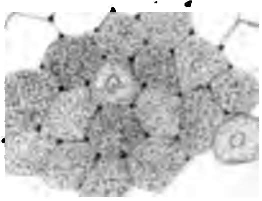
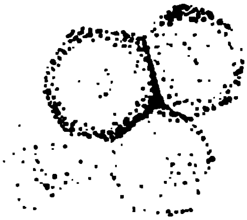


Fig 3



DONATIONS TO MUSEUM.

IN SEPTEMBER AND OCTOBER, 1849.

September 4th.

Twenty-two Skeletons of Birds, as follows: Cygnus atratus, Aquila fusca, Milvus sphænurus, Talegalus Lathami, Centropus gigas, Calyptorynchus xanthonotus, Dacelo gigantea, Podargus cinereus, Botaurus australis, Cracticus hypoleucus, Corcorax australis, Graucalus parvirostris, Myzantha pumila, Anthochæra Lewinii, Hæmatopodus varius, Cuculus cinerascens, Platycircus pallicps, Ceyx azureus, Acanthyza diemensensis, Coronica australis, Megapodius tremulus, Diomedea exulans. From Dr. T. B. Wilson.

Coronella doliata, from Louisiana. From J. Coleman Fisher, Esq.

A species of Diodon, and several specimens of Corals and Shells from Long Branch, N. J. From Samuel Powel, Esq.

September 11th.

Forty specimens of Gold, Silver and Lead Ores, from the mines of Cordova, South America. From T. F. Moss, Esq.

Ichthyophilus from Sargus ovis, from Beasley's Point, N. J. From Samuel Ashmead, Esq.

September 18th.

A collection of Shells and Minerals. From Dr. E. J. Lewis.

Stilbite, from Nova Scotia. From Dr. Hallowell.

Metatarsal bone of Anoplotherium commune, from Montmartre, France. Deposited by same.

October 2d.

Mounted specimen of Lepidosteus ferox, from the Mississippi river. From Mr. J. D. Anderson.

Teredo navalis. From R. Pitcher, U. S. N.

Coluber ——, from Trindad. From Dr. Watson.

Aragonite, from Styria, Native Mercury from Idria, Miargarite and Feather Ore from Braundorff, White Antimony from do., Pecten from the Jura of ——, Pecopterus, from Saxony. Presented by Theo. F. Moss, Esq.

Fossil Wood from the Drift of New Jersey; from Long Branch. Deposited by Mr. Samuel Powel.

Stone Adze, found in New Jersey. From the same.

October 16th.

A collection of Coleoptera and Lepidoptera. Presented by Dr. John Neill.

Mounted specimen of Chlamyphorus truncatus, (the original specimen described by Dr. R. Harlan in Vol. 1. Annals of Lyceum of New York). Also the cranium of the same. Presented by Dr. Wilson.

Dwarf variety of Gallus Bankiva. From Dr. Wistar, of Germantown.

Hybrid between the Mallard duck and the Muscovy. From Mr. Edward Harris.

October 23d.

Panopeus, Grapsus, Dromia, Porcellana, Achelous, Sesarma, and two species not named, from Brazil; Spondylus varius, and Bulimus hæmastomus, from Para. Pholadomya, and Mountain Limestone, from South Wales. Presented by Dr. Wilson.

Coryctes, Piremela, Porcellana, from England; Craster, Ophiscoma, from Pembrokeshire, England. Presented by E. T. and C. W. Wilson, of South Wales.

Fine fragment of the inferior maxilla with bases of four teeth, of Mosasaurus, ——, from the Green Sand, Mount Holly, New Jersey. Presented by Dr. S. G. Morton.

Dr. Morton also presented to the Society all those fragments of Mosasaurus, heretofore deposited by him.

Taphozous rufus, Harlan, captured on Quercus ferruginea. From Dr. Alexander.

DONATIONS TO LIBRARY.

In September and October, 1849.

September 4th.

Conspectus Crustaceorum quæ in Orbis Terrarum circumnavigatione Carolo Wilkes e Classe Reipublicæ federatæ duce lexit et descripsit J. D. Dana. From the author.

Synopsis of the genera of Grammaraceæ. Prom J. D. Dana. From the same.

Dr. Wilson deposited:

Zeitschrift für Malakozoologie. Von K. T. Menke und Dr. L. Pfeiffer. No. 1, for 1849.

Comptes rendus: Tome 28, Nos. 17–26. Table des Comptes rendus, Tome 27.

Revue et Magasin de Zoologie par M. Guérin-Méneville. Nos. 1–5. 8vo.

The London Athenæum, for June and July, 1849.

Transactions of the Zoological Society of London. Vol. 3. Parts 5 and 6.

September 11th.

The Pathology and treatment of cholera. By Samuel Cartwright, M. D. From the author.

Some remarks on premedication: and the doctrine of a retrograde action from collapsion of the absorbent and capillary vessels. By Samuel Cartwright, M. D. From the same.

A glance at the Fossil Flora of the Carboniferous Epoch. By Henry Denny. From the author.

Zeitschrift für Malakozoologie, von K. T. Menke, M. D., und Dr. L. Pfeiffer. No. 12 for 1848.

Abhandlungen aus dem Gebiete der Zoologie und Vergleichenden Anatomie, von H. Schlegel. Nos. 1 and 2. 4to.

Die Versteinerungen des Norddeutsch-Kreidegebirges. Von F. A. Rœmer.

The Annals and Magazine of Natural History. Vol. 4, new series. No. 10.

History of British Mollusca, &c. By Prof. E. Forbes and S. Hanly. Part 19. 8vo.

Buffoni et Daubentoni figurarum Avium coloratarum nomina systematica collegit H. Kuhl.

Die Versteinerungen des Harzebirges. Beschrieben von F. A. Rœmer.

Conchologia Iconica. By Lovel Reeve. Part 75.

Abbildungen und Beschreibungen neur oder wenig gekannter Conchylien, von Dr. R. A. Philippi. Vol. 3, Part 5.

Palæontographia. Beiträge zur Naturgeschichte der Vorwelt. Von Dr. W. Dunker and H. Von Meyer. Vol. 2, Part 1.

Illustrations of British Mycclogy. By Mrs. T. J. Hussey. Part 28. 4to.

The genera of Diurnal Lepidoptera. By E. Doubleday. Part 30. 4to.

Chloris Protogæa. Von F. Unger. Nos. 8, 9, 10, folio.

Die Versteinerungen des Norddeutschen Oolithen-Gebirges. Von F. A. Rœmer. 4 vols. 4to.

Skandinaviske Foglar af M. Köner. 4to.

Vögel aus Asien, Africa, America und Neuholland. Von Dr. C. W. Hanh, 19 parts. 40.

Ornithologischer Atlas der Aussereuropöischen Vögel. Von H. C. Küster. No. 15.

Narrative of an attempt to reach the North Pole, in 1827. under the command of Capt. W. E. Parry, R. N. 4to.

Report of the sixteenth meeting of the British Association, 1846. Report for 1847, 2 vols. 8vo.

Die Insel Helgoland. Untersuchungen über deren Grösse in Vorzeit und Gegenwart. Von K. W. M. Wiebel. 4to.

Die Petrefactenkunde auf ihrem jetzigeu Standpunkte durch die Beschreibung seiner Sammlung versteinerter und fossiler Ueberreste des Thier und Pflanzenreichs der Vorwelt erläutert von E. F. Baron von Schlotheim. 1 vol. 8vo., and atlas 4to.

Nachträge zur Petrefactenkunde von Baron Von Schlotheim. 2 vols. 8vo., and atlas 4to.

Vermium Intestinalium, præsertim Tæniæ humanæ, brevis expositio; Auctore P. C. F. Werner. 8 parts. 8vo.

North American Sylva. Nuttall's Supplement. Vol. 3. Part 2.

On the nature of Limbs. By Richard Owen. 8vo.

On the Homologies of the Vertebrate Skeleton. By Richard Owen. 1 vol. 8vo.

Oriental Memoirs. By James Forbes. 4 vols.

Narrative of a voyage to the Pacific Ocean and Behring's Straits in H. M. Ship Blossom, in 1825–'28. 1 vol. 4to.

Portraits of rare and curious Birds, with their descriptions, from the Menagery of Osterly Park. By W. Hayes and family. 2 vols. 4to.

A Natural History of Birds. By Eleazer Albin. 3 vols. 4to.

The English Entomologist. By Thomas Martyn. 4to.

A new Dictionary of Natural History. By Wm. F. Martyn, Esq. Folio.

Conchology, or the Natural History of Shells. By George Perry. Folio.

The Birds of Great Britain. By W. Lewin. 8 vols. in 4. 4to.

September 18th.

Proceedings of the American Academy of Arts and Sciences. Vol. 2. pp. 1–160. From the Academy.

American Journal of Science and Arts. 2d series. No. 23. Sept., 1849. From the Editors.

Bulletin de la Société Imperiale des Naturalistes de Moscou. Nos. 3 et 4, 1848, et No. 1, 1849. From the Society.

Journal of the Indian Archipelago and Eastern Asia. Vol. 3, Nos. 3, 4 and 5. From the Editor.

October 2d.

Bibliotheca Animalis. Von Fr. E. Bruckmann. 8vo. Deposited by Dr. Griffith.

Thomæ Pancovii Herbarinm. 4to. From the same.

On the use of a new Micrometer, and its application to the determination of the parallax of Mars. By Prof. Dr. Von Bogerslawski. From the author.

Uebersicht der Arbeiten and Veränderungen der Schlesischen Gesellschaft für vaterländische Kultur im Jahr, 1849. 8vo. From Prof. Bogerslawski.

Gelehrte Anzeigen. Herausgeg. von Mitgliedern der k. bayer. Akad. der Wissenschaften. Nos. 26, 27. 1848. 8vo. From the Academy.

Abhandlungen der Mathematisch-physikalischen Classe der k. bayer. Akad. Vol. 5. No. 2. 4to. From the same.

Bulletin der k. bayer. Akad der Wis. Nos. 1—52. 1848.

Die Chemie in ihrem Verhaltnisse zur Physiologie und Pathologie. Von D. Max. Pettenkoffer. From the same.

Denkrede auf J. G. Zuccarini. Von C. F. P. V. Martius. From the same.

Rede bei Eroffnung der Sitzung der k. b. Akad. der Wis. 28 März, 1848. Von Dr. Carl Fried. P. V. Martius. From the same.

Monograph of Steatoma, a new genus of new operculated land-shells. By C. B. Adams. From the author.

Transactions of the Society instituted at London, for encouragement of Arts, Manufactures and Commerce. 41 vols. 8vo. From Wm. Hembel, Esq.

Dr. Wilson presented the following:

Philosophical Transactions of the Royal Society of London, from 1665 to 1840 inclusive, one hundred and eleven vols. 4to.

The same from 1665 to 1800; abridged by C. Hutton, LL. D., George Shaw, M. D., and Richard Pearson, M. D. 18 vols. 4to.

The London Athenæum for Aug., 1849.

Comptes Rendus, Nos. 1–4. Tome 29.

Revue et Magasin de Zoologie, No. 6.

October 23d.

Memorials of John Bartram and Humphrey Marshall. By Wm. Darlington, M. D. Royal 8vo. From Miss Percival.

Flora Carolinensis. By John L. E. W. Shecut. Vol. 1st. 8vo. Deposited by Dr. Griffith.

De l'Homme Animal. Par le Dr. Felix Voisin. 8vo. From Prof. Haldeman.

Opuscoli Litterarii. 3 vols. 4to. From Dr. Isaac Hays.

Opuscoli Scientifici. 4 vols. 4to. From the same.

Notice of a remarkable hot wind in the Zillah of Purneah. By H. Piddington. From the author.

Examination of some atmospheric dust from Shanghæ, forwarded to the Asiatic Society of Bengal by Dr. Macgowan. By H. Piddington. From the same.

Notice of the ferruginous Spherüles imbedded in sand stone, brought from Lulleetpore in Bundelcund, by Dr. Spilsbury. By H. Piddington. From the same.

Examination and Analysis of the Ball Coal of the Bardwan Mines. By H. Piddington. From the same.

On the great diamond in the possession of the Nizam. By H. Piddington. From the same.

November 6th.

Vice President **Morton** in the Chair.

The Corresponding Secretary read a letter from Dr. T. Romeyn Beck, dated Albany, October 24, 1849, acknowledging, on behalf of the Trustees of the New York State Library, the receipt of Nos. 9 and 10, Vol. 4, of the Proceedings of the Academy.

Also, a letter from Francis Peyre Porcher, M. D., dated Charleston, S. C., October 1, 1849, acknowledging the receipt of his notice of election as a Correspondent.

Also, a letter from the Secretary of the Western Academy of Natural Sciences, dated Cincinnati, October, 1849, acknowledging the receipt of the last number of the Proceedings.

The Recording Secretary read a letter addressed to Dr. Morton, by Mr. Richard H. Kern, a member of this Institution, dated Santa Fé, New Mexico, 1849, giving an interesting account of his recent Ethnological and Archæological exploration in New Mexico.

Dr. Bridges presented a paper by Dr. R. W. Gibbes, of South Carolina, entitled "New species of Myliobates from the Eocene of South Carolina, with other genera not heretofore observed in the United States." Referred to Drs. Bridges, Morton and Leidy.

Dr. Leidy made some remarks upon several new species of Entophyta, Enterobrus spiralis, and E. attenuatum, and a new species of Gregarina, discovered by him.

On leave granted, Dr. Bridges offered a resolution to appoint a committee to enquire into the expediency of appropriating the room adjoining the Library for the purpose of the same, and also what alterations may be necessary, and to report to the Academy at next meeting.

The resolution was adopted, and a committee appointed consisting of Drs. Bridges, Zantzinger and Wilson.

On motion of Mr. Cassin, it was resolved, that the Committee on Proceedings be authorised to complete the copy of the Proceedings for the Western Academy of Natural Sciences.

November 13th.

Vice President **Morton** in the Chair.

A letter was read, dated Nürnberg, July 24, 1849, from Messrs. Frederick and J. W. Stürm, announcing the decease of their father Jacob Stürm, a correspondent of the Academy. Also requesting an exchange of publications with the Society.

Dr. Hallowell remarked that recently, a living specimen of the serpent, described in a former number of the Proceedings as Coluber venustus, was brought to the Academy by Dr. Watson, and gave birth to seven young, the animal being viviparous. They varied in length from two inches to three inches one and a half lines. The color is dark slate above, darker upon the head and lighter upon the abdomen. The white spots upon the occiput are very distinct. In four of the specimens there are three spots; in the others they coalesce more or less, in one of them forming a narrow irregular white band, the animal resembling very much the adult Coluber punctatus. There is also a white spot upon the upper jaw.

The Chairman made some remarks upon a specimen of "bloody bread," the result of the Monas prodigiosa, given him by Prof. Bailey, of West Point, and obtained by the latter from Prof. Ehrenberg, of Berlin.

The Chairman also remarked, that the Charib Skull, deposited by him this evening, had been obtained in the island of Nassau, by the late Rev. Thomas Leaver, from whom it was derived by Dr. T. C. Deans, of Newport, R. I., who presented it to Dr. Morton.

On leave granted, the Committee appointed at last meeting, to enquire into the expediency of altering the room adjoining the Library, so as to adapt it to the purposes of the same, made a report, embracing the details of a plan for the object proposed, and recommending that authority be given for an immediate commencement of the work.

The report was adopted, and the Committee instructed to carry out the plan as described.

November 20th.

Vice President MORTON in the Chair.

The Corresponding Secretary read a letter from Mr. J. M. McMinn, dated Milesburg, Centre County, Pennsylvania, addressed to Dr. Zantsinger, containing the following:—

> "I send you some specimens of our 'Snow bug.' This insect occurs in great numbers on the mountains of Pennsylvania. I have frequently noticed them in mid-winter on the snow, but I never saw such a multitude of them together, as I witnessed on the 17th of February, 1849, near the "Rattle Snake," on the Alleghany Ridge. The snow was entirely covered for the fourth of a mile along the road, and several rods on either side. The mercury in F. was standing at about 15 degrees; the atmosphere was dry and clear.
>
> These little animals were quite stupid, and to all appearance had been but a short time there, and as it was about 9 o'clock in the morning, I judged that they arrived in the night.
>
> Their motion was slow, and those on the top were quietly endeavoring to get under. They did not appear to be eating any thing. The weather was too cold to remain and watch their movements, and the next day, when I again passed the spot, I could not detect a vestige of them.
>
> The wind had been strong from the north for several days, and I have noticed that we had strong north winds whenever I had seen them."

A letter was read from the Librarian of the Smithsonian Institution, dated Washington, November 1, 1849, acknowledging the receipt of Part 3, Vol. 1, of the Journal, and other publications of the Academy; and also desiring that some deficiencies in the same be supplied.

November 27th.

Vice President **Morton** in the Chair.

The Committee to which was referred the paper of Dr. R. W. Gibbes, describing new species of Myliobates from the Eocene of South Carolina, &c., reported in favour of publication in the Journal of the Academy.

The report of the Corresponding Secretary for October and November, was read and adopted.

The following communication was received from the Secretary of the American Philosophical Society:—

> "At a meeting of the American Philosophical Society, held on Friday evening, November 2, 1849, the following resolution was unanimously adopted:
>
> *Resolved*, That the Curators be authorized to deposit the fossil organic remains belonging to the Society, with the Academy of Natural Sciences of Philadelphia, provided the Academy will agree to accept the deposit, and take proper measures for the preservation of the specimens, and by their proper officer sign a receipt for the same, and agree to return them in good condition, when required by this Society."
>
> Extract from the minutes. Charles B. Trego, Secretary.

On motion of Mr. Cassin, the Curators of the Academy were authorised to receive the collection of Organic remains belonging to the American Philosophical Society, on the conditions proposed in the above resolution, with some slight modification.

ELECTION.

William Parker Foulke, Esq., of Philadelphia, was elected a *Member* of the Academy.

December 4th.

Mr. Vaux in the Chair.

A letter was read from Wm. P. Foulke, Esq., acknowledging the receipt of his notice of election as a member.

A communication was received and read from William Hembel, Esq., President of the Academy, declining a re-election to the office, assigning as his motive, the increasing infirmities of age, and his inability in consequence to perform properly the duties of the office, or to take an active part in the affairs of the Society.

Dr. Leidy read a memoir, entitled "Descriptions of two species of Distoma, with the partial history of one of them, by Joseph Leidy, M. D.," accompanied by drawings, and intended for publication in the Journal. Referred to Drs. Bridges, Morton and Hallowell.

December 11*th.*

Vice President MORTON in the Chair.

A letter was read from Dr. T. Romeyn Beck, dated Albany, December 7th, 1849, acknowledging, on behalf of the Regents of the University of the State of New York, the receipt of the last number of the Proceedings.

Dr. Bridges presented a paper from Dr. Le Conte, of New York, entitled "An attempt to classify the Longicorn Coleoptera of the part of America north of Mexico," by John L. Le Conte, M. D., and intended for publication in the Journal of the Academy. Referred to Drs. Bridges, Leidy and Hallowell.

Dr. Leidy read a paper (accompanied by drawings,) intended for publication in the Proceedings, entitled "Descriptions of new genera and species of Entophyta," by Joseph Leidy, M. D. Referred to Drs. Hallowell, Morton and Zantzinger.

Dr. Morton read a portion of a paper designed for publication in the Journal, entitled "On the size of the Brain in various races and families of Man, with Ethnological Remarks:" by S. G. Morton, M. D.; which was referred to a committee consisting of Mr. Phillips, Dr. Hallowell, and Mr. H. C. Lea.

On leave granted, Dr. Bridges presented a report from the Committee on Dr. Leidy's "Description of two species of Distoma, with the partial history of one them," recommending the same for publication in the Journal.

By request, the letter of Wm. Hembel, Esq., President of the Academy, presented at the meeting of the 4th inst., declining a re-election, was again read, and after some remarks by Mr. Cassin, the latter offered a series of resolutions, expressive of the great regret of the members at the determination of the President, and their unanimous wish that he would consent to retain the office.

The resolutions were unanimously adopted, and the Recording Secretary directed to furnish a copy of the same to Mr. Hembel, signed by the officers and members present at this meeting.

December 18*th.*

Vice President MORTON in the Chair.

A communication was read from the Royal Society of London, dated Somerset House, August 18, 1849, acknowledging the receipt of Parts 1 and 2, new series, of the Journal, and several recent numbers of the Proceedings.

A letter was read from H. W. Ravenel, Esq., dated Black Oak, Charleston District, S. C., December 7, 1849, announcing the transmission to the Academy of numerous botanical specimens, collected by himself, from that vicinity, including several new Cryptogamous plants.

Also a letter from M. Victor Motchaulsky, proposing to exchange Russian Coleoptera for those of America.

Also a communication from the President of the Academy, William Hembel, Esq., reiterating his desire to decline a re-election to the office, and expressing his acknowledgments for the sentiments contained in the resolutions passed at the last meeting of the Society.

Dr. Morton read a continuation of his paper on the size of the Brain in the various races of Man, the first portion of which was presented at a former meeting. Referred to the same committee, viz., Messrs. Phillips, Hallowell and H. C. Lea.

On leave granted, the Committee to which was referred Dr. Le Conte's memoir, "An attempt to classify the Longicorn Coleoptera of that part of America north of Mexico," presented a report, recommending the same for publication in the Journal.

December 25th.

Prof. W. R. Johnson, in the Chair.

The committee to which was referred the following paper, by Dr. Leidy, reported in favor of publication in the Proceedings.

Descriptions (accompanied by drawings,) of new Genera and Species of Entophyta.

BY JOSEPH LEIDY, M. D.

Enterobrus spiralis. Yellowish, brownish, brown, or hyaline, forming a single, double, or triple spiral. Peduncle brownish or yellowish, columnar, 1-2500th in. long, by 1-6000th in. thick. First or principal cell uniformly cylindrical, filled with granules and globules, 1-4285th in. in diameter. Penultimate cell cylindrical, filled with granules, 1-535th in. long, by 1-3333d in. at broadest part.

Length from 1-70th to 1-50th in., by 1-4200th in. broad.

Habitat.—Grows from the mucous membrane of the small intestine of Julus pusillus.

Remarks.—This species is found in varying quantity from a half dozen individuals up to fifty or more of various ages. The specimens of Julus pusillus from which the plant was obtained, measured half an inch in length.

Enterobrus attenuatus. Faintly brownish, yellowish, or hyaline, forming a double flexure or sigmoid curve, and then growing in a very straight course to its termination. Peduncle yellowish, columnar, sometimes double, 1-666th in. long, by 1-2300th in. broad. Principal cell attenuated at both extremities, rounded or truncated at the discal end, and filled with varying quantity of globules and granules. End cells?

Length 1-24th in.; diameter at middle 1-1500th in.; at sigmoid curve 1-2300th in.; at distal extremity 1-2500th in.

Habitat.—Grows in profusion from the mucous membrane of the ventriculus of Passalus cornutus.

Remarks.—This is a very graceful form, and is more disposed to grow in bunches or close together, than the other species. I have not met with it with the terminal two cells in twelve specimens of Passalus, which contained over a hundred of the plants, although from some of the individuals appearing truncated at the distal extremity, I think it probable that they may occur; otherwise it would form a distinct genus.

Cladophytum ramosissimum. Filaments very long, very delicate, and very much branched, growing in fasciculi of moderate density from granular masses.

Length 1-75th in.; thickness of principal filaments or trunks 1-15000th in.

Habitat.—Growing in moderate profuseness from the mucous membrane of Passalus cornutus.

New Genus. CORYNOCLADUS.*

Filaments hyaline, inarticulate, very compound; branches thicker than the trunk, clavate, without ramuli, growing from rounded or oval granular masses.

Corynocladus radiatus. Comatose, growing in very dense bunches, occasionally straggling; branches spreading, terminal ones very long, simple, clavate, 1-150th in. long.

Length 1-100th in., diameter of trunk 1-10,000 in., branches 1-600th in.

Habitat.—Growing profusely in the ventriculus of Passalus cornutus, from the mucous membrane.

New Genus. CRYPTODESMA.†

Filaments ribbon-like, growing from attached granular masses. Consisting of a single cell, with a very delicate cell wall, and minute granular contents.

C. tenuis. Filaments hyaline, compressed, attenuated at both extremities, growing in dense bunches from rounded granular masses. Cell wall very thin and delicate, granular contents of cell very fine and indistinct, measuring from 1-10,000th in. to 1-6000th in., with a few coarser granules, and occasionally a few globules, measuring 1-1875th in.

Dimensions. Length of filaments 1-500th in. to 1-75th in.; greatest breadth 1-1700th in.

Habitat.—Grows in profusion from the mucous membrane of the ventriculus of Passalus cornutus.

Besides the foregoing, I have found numerous free or floating entophyta in the contents, usually of the posterior part of the alimentary canal, in mammalia, aves, reptilia, pisces, mollusca, insecta, &c. These, at present, I do not feel at liberty to describe as new or particular, from my want of acquaintance with cryptogamic botany. A number of them, I have no doubt, if not peculiar, at least continue to grow luxuriantly in the intestinal canal; such are various Myoderma, &c.; others very probably are swallowed with the food, and pass from the intestinal canal unchanged. Numerous drawings of these I exhibit to the Academy, and propose leaving them to future investigation, or to the consideration of cryptogamic botanists, being a field well worthy of their researches. I also have a number of others, the character of which is peculiarly entophytic: but these I have not yet studied out nor figured, but hope to present descriptions of them to the Academy in a very short time.

---

*Κορύνα clava; Κλαδος.

†Κρυπτός, occultus; δέσμα, fascis.

The Recording Secretary read the following report:

REPORT

OF THE RECORDING SECRETARY.

For 1848, '49.

As there is no Report of the Recording Secretary for the year 1848 entered upon the Minutes of the Academy, it will be proper to give a short account of the Transactions of the Society during the last two years.

There were elected, during 1848, fourteen Resident Members and twenty-five Correspondents; and during 1849, eight Resident Members and six Correspondents. In the former year a corrected list of the Members and Correspondents was published, which comprises 102 Life Members, and 143 Members paying annually: of these, 63 are deceased; and 518 Correspondents, of whom 85 are deceased. Since the publication of the list, one member has resigned, and another, Benjamin J. Kern, M. D., is deceased.

From October, 1847, to the end of the last year, besides numerous minor communications, there have been fifty principal ones made to the Academy and published in its Proceedings, as follows: in General Natural History, one by Dr. Morton, two by Dr. Hallowell, two by Dr. Bachman, one by Dr. Michel, two by Dr. Keller, and ten by Dr. Leidy; in Mammalogy, one by Dr. Gambel; in Ornithology, ten by Mr. Cassin, two by Dr. Gambel, and one by Major McCall: in Herpetology, four by Dr. Hallowell; in Palæontology, one by Mr. Lea and three by Dr. Leidy; in Conchology, two by Mr. Conrad; in Entomology, three by Mr. Haldeman, one by Miss Morris, two by Dr. Savage, and one by Mr. Dawson; in Botany, one by Mr. Nuttall; and in Geology, one by Mr. Pease.

With the beginning of 1848, a new series of the Journal of the Academy, in quarto form, was commenced, and to it, during the past two years, there have been twenty-seven articles contributed, as follow: in General Natural History, one by Dr. Morton, one by Dr. Meigs, and two by Dr. Leidy; in Ornithology, five by Mr. Cassin and two by Dr. Gambel; in Herpetology, one by Prof. Baird; in Conchology, two by Mr. Conrad; in Entomology, two by Mr. Haldeman and two by Dr. Le Conte; in Botany, one by Mr. Nuttall; and in Palæontology, four by Dr. Gibbes, two by Mr. Conrad, one by Mr. Tuomey, and one by Prof. Owen. The publication of the Journal hereafter will be much assisted by an annual income derived from a legacy of two thousand dollars, bequeathed for that purpose to the Academy in 1848, by the late Mrs. Elizabeth Stott, of this city.

During the same year the following amendment was made to the By-Laws, viz.: "Chap. VIII. Art. IX. The Museum of the Academy shall be open to the gratuitous admission of the public on the afternoons of Tuesday and Friday from one o'clock until sunset." And during the last year the following amendment, viz.: "Chap. VI. Art. I. There shall be fifteen standing committees, viz.— 1, The Ethnological Committee; 2, the Committee on Comparative Anatomy and General Zoology; 3, Committee on Mammalogy; 4, on Ornithology; 5, on Herpetology and Ichthyology; 6, on Conchology; 7, on Entomology; 8, on Botany; 9, on Palæontology; 10, on Geology and Mineralogy; 11, on Physics; 12, on the Library; 13, on the Proceedings; 14, the Auditors; each to consist of three members; and 15, the Publication Committee, to consist of five members; whose term of service shall be one year. And all these, except the Auditors and Publication Committee, shall be elected at the last meeting in January of each year."

After these alterations, a new edition of the Act of Incorporation and By-Laws was published by order of the Academy.

With these few statistics, etc. of the transactions of the Academy, the Secretary will conclude by stating, that the Society was never in a more flourishing condition than at present, as is plainly indicated in its published Proceedings. The Library and Museum have received, and continue to receive, constant large and valuable additions, as may be seen upon referring to the reports of the Librarian and Curators.

Joseph Leidy,
Recording Secretary,
pro tempore.

December 25, 1849.

The Treasurer read the annual report, which was referred to the Auditors.

The Librarian read the following report:—

REPORT
OF THE LIBRARIAN,
For the year 1849.

In presenting the annual report on the state of the Library, the Librarian again embraces the opportunity afforded him, of congratulating the Society on the continued advancement which his department has made in the present year.

The additions to the Library will fully bear comparison in all respects with those of any previous year, as the following table will exhibit, in which they have been arranged in the usual form.

	Number of Volumes.	Periodicals and serials in parts, numbers, livs. &c.	Pamphlets.		Number of Volumes.	Periodicals and serials in parts, numbers, livs. &c.	Pamphlets.
General Natural History,	90	19	14	Brought over	445	223	115
Mammalogy,	20		5	Physical Sci. and Chemistry,	5		7
Ornithology,	47	69	3	Medicine,		11	2
Herpetology,	9		4	Trans and Proceed. of Soc., Annals, Journals, &c.	238	269	
Ichthyology,	13		8	Voyages and Travels,	82	30	
Entomology and Crustacea,	69	26	12	History,	2		
Conchology and Helminthology,	32	54	15	Biography,	2		3
Botany,	35	27	8	Antiquities,	2		
Geology,	60	18	22	Geography,	1		
Mineralogy,	10		7	Bibliography,	9		1
Anatomy and Physiology,	60	10	17	Education,	2		
				Miscellaneous,	1		10
	445	223	115		789	535	138

Of these, there were derived from authors 68; from editors 25; from members, correspondents, &c. 150: from Societies and Corporations 59; from Dr. Wilson 1158; making an aggregate of 1460 additions to the Library in 1849.

The additions in 1847 amounted to 1072; in 1848 to 1349, and in the present year exceeding the last by 111.

With one exception these have been the most prosperous years for the Library since the foundation of the Institution. In these three years the additions have amounted to 3881; of which, 2773 are due to Dr. Wilson, and the remainder, 1108, have been derived from other sources.

The Librarian has renewed gratification in calling attention to the continued liberality during the year of Dr. Wilson. The Library has always received a large share of the interest and zeal which this gentleman has steadily manifested for the Institution, and the results have been recorded on our minutes almost weekly for several years past, in the long list of varied, well selected, and highly practical works which he has placed upon its shelves.

Until within a short period, these works have been entrusted to the Society for the benefit of the members, without other restrictions than such as its rules, and a due regard for the property, required. Dr. Wilson has, however, thought proper to convert this splendid collection from a *deposit* into a *donation*, and I have now the pleasure of announcing to the Society that we shall soon be in possession of the whole collection, on the single condition that the use of the works be restricted to the Hall: none of them, therefore, will be loaned from the Hall on any pretext whatever. The numerous works in Mineralogy and Geology, Entomology, Herpetology and Ichthyology, Conchology, Botany, General Natural History, Mammalogy, Voyages and Travels, and the Periodicals have already been presented. The remainder will follow as the time and leisure of the donor will admit of his preparing the lists.

Among the additions this year are a number of works on Conchology, obtained by purchase with the proceeds of the sale of several copies of Say's Conchology, for which latter the Society is indebted to the liberality of Mrs. Lucy W. Say, by whose instructions the fund is thus appropriated. We are under obligations also this year, to Professor Agassiz, for a donation of numerous quarto volumes of the Transactions of two Swiss Natural History Societies; and to our venerable President, William Hembel, Esq., for a valuable and scarce work in 41 vols. 8vo. the Transactions of the London Society for the Encouragement of Arts, Manufactures and Commerce. Dr. Wilson's donation of the Transactions of the Royal Society of London complete from the origin of the publication in 1665, to the middle of 1849, in 119 quarto vols., with the abridgement of the same, from 1665 to 1800, in 18 quarto vols., by Hutton, Shaw and Pearson, has been received with the highest gratification by the members.

In the last report, it was stated that further accommodations for the Books would soon be required, the space in the present apartment becoming rapidly occupied. This necessity has since greatly increased, and, in consequence a plan has been submitted to the Society, and received its sanction, for adapting one of the adjoining rooms to the purposes of a Library. The floor of this room, and that of the entry beyond, will be lowered to a level with the present Library, and laid on iron joist, with intervening brick arches, and a gallery constructed similar to, and communicating with, that in the same. The work will be commenced forthwith, and will be completed in a few weeks. The building, with the exception of one room, will then be perfectly fire-proof. When this improvement has been finished, and a new arrangement and distribution of the Library made, the exact No. of vols. &c. in each department, with the aggregate, which it was intended to have appended to the present report, will be made known to the Society.

Wm. S. Zantzinger,
Librarian.

Hall of the Academy, Dec. 25, 1849.

Dr. Leidy, Chairman of the Curators, read the annual report as follows:

REPORT
OF THE CURATORS
For 1849.

It is with much pleasure the Curators, in presenting their Annual Report, can say that the collections of the Academy, during the year 1849, have increased to such an extent as to be indicative of a continuance of the extraordinary prosperity which it enjoyed the two preceding years. Most of the departments have been enriched through donation and deposit, with many rare and valuable objects.

Since the presentation of the last report of the Curators, there has been constructed a line of horizontal, centrally vertical, double cases, down the centre of the Hall, for the further accommodation of the palæontological collection; a large, deep, horizontal, double case at the east end of the same, for the reception of the larger specimens of organic remains; a line of horizontal cases on the outside of the railing of the lower gallery, on each side of the Hall, for containing the Oological collection; and several vertical cases, occupying the landing of the stair-case in the south-east corner, for the extension, of the Ornithological collection.

A short account of the increase in the Museum during the past year we give under the head of each department.

Mammalogy.—In this department, during the past year, we have received 22 species of Mammalia, among which may be particularly mentioned the original specimen, described by Dr. Harlan, of Chlamyphorus truncatus, a magnificent albino deer, Cervus virginianus, presented by Dr. Wilson, and a fine Ornithorynchus paradoxus, presented by Dr. Michael.

Ornithology.—A special report upon this extensive department of our Museum has been prepared by Mr. Cassin, on which account it is unnecessary for us to make any remark upon it, except that during the past year there have been added to it, from other sources than Dr. Wilson, 61 species, 76 specimens of birds.

In *Oology* we have been enriched by the deposit from Dr. Wilson of two very large and celebrated collections of birds' eggs. The first of these is a general and very extensive collection, made through a long period of time, and at great expense and trouble, by M. O. Des Murs, of Paris. This contains 1281 species, 2449 specimens, and 10 nests, of which 1041 species are determined. The second is a collection of birds' eggs, exclusively of Australia, made by Mr. John

Gould of London. It comprises 303 species, 976 specimens, and 33 nests, of which 295 species are determined.

In the latter collection of eggs are 58 species contained in the former; deducting these, the number of species in the two collections amounts to 1526, of which 1278 are determined. The whole number of specimens in the two collections is 4425.

When we consider the difficulty of obtaining and determining oological specimens, the delicacy required in their preparation, and the care necessary for their preservation in transportation, we may in some measure form an estimate of the value of this rich deposit.

Besides the above, we have received from several of the members 12 species and 15 specimens of birds' eggs, and 9 species of nests.

Herpetology and Ichthyology.—In the past year these collections were removed, and rearranged upon the flying gallery of the east basement room. During the same time we have received 20 species, 50 specimens of reptilia, and 8 species, 11 specimens of fishes, among the latter of which is a very beautiful specimen of Lepidosteus ferox, Raf., from the Mississippi, presented by Mr. J. D. Anderson, of New Orleans.

Mollusca.—In this department, the donations during the past year are unparalleled in America. To our generous and excellent fellow member, Dr. R. E. Griffith, we owe lasting gratitude for the splendid gift of 4907 species, over 12,000 specimens of shells, being the private collection made by this gentleman at much cost and pains, during a long series of years. To Dr. T. B. Wilson we are indebted, as ever, for the donation of 1707 species, over 3500 specimens of shells.

These two collections comprise 5405 species, of which the odd 405 may be cast off as duplicate, certainly not more, as we are informed by Dr. Griffith, who is Chairman of the Conchological Committee, and is engaged in arranging this department, which would leave a balance of 5000 different species.

From the Australian Museum, in exchange, we received 111 species, 328 specimens, Australian, New Zealand, and South Sea Island shells.

From various other sources 105 species, 204 specimens of shells, principally presented by Mr. McAndrew, of England, Dr. Gould, of Boston, Mr. Thompson, of Belfast, Ireland, and Mr. Watson, of S. Africa.

Insecta, Crustacea, and *Arachnida.*—The Entomological cabinet has received the addition of 200 species of insects, principally from Mr. Hagedorn, the Bavarian Consul, and in exchange from the Australian Museum.

Of Crustacea there have been obtained, by exchange and presentation, 59 species, 163 specimens, principally from M. E. Griffith, Mr. Thompson, of Belfast, Ireland, and Dr. Wilson.

Of Arachnida we obtained 2 species, 4 specimens of Scorpio.

Radiata.—Of these we have received an unusually large number, viz., 112 species, 120 specimens, principally from Mr. Thompson in exchange; the others presented by different members of the society. Most of them are Echinodermata and Polypi.

Comparative Anatomy.—To this part of our Museum an extensive addition has been made, through the liberality of our fellow-member Dr. P. B. Goddard, consisting of 106 crania of mammalia, 30 do. birds, 4 do. reptiles, and 3 do. fishes;

8 skeletons of mammalia, 6 do. birds, and 2 do. reptiles; and 21 other interesting pieces in comparative anatomy.

Dr. Wilson also extended this collection by the donation of 22 mounted skeletons of birds, principally Australian, and 5 other anatomical pieces.

Besides the foregoing, there have been deposited and presented 39 other crania and pieces, principally by Dr. Morton.

Botany.—The herbarium has received the addition, through exchange and donation, of 160 species of Cryptogamia.

Palæontology.—A large collection of organic remains has been added to the Museum by Dr. Wilson, consisting of 658 species, 1552 specimens of British fossils, many of which are very beautiful and rare.

From other sources we have received 197 fossils, principally from Messrs. Verreaux of Paris, Budd, McMinn and Morton.

A few weeks since our sister institution, the American Philosophical Society, passed a resolution to deposit its Collection of Organic Remains with the Academy. The large number of mammalian remains in this collection renders it one of the most important deposits which has yet been made to our Museum. When received, a more particular account of it will be given.

Mineralogy and Geology.—The cabinet of Mineralogy contains over 3700 labelled specimens, exclusive of rocks. During the past year there were received 206 specimens, chiefly from Messrs. Moss, Verreaux and Wilson.

We will finish this brief report by stating that the collections in all the departments are, at the present time, in a good state of preservation, and are gradually undergoing arrangement by the different committees.

Joseph Leidy,

December 25*th*, 1849. *Chairman of Curators.*

Mr. Cassin, from the Curators, read the following special report on the state of the Ornithological collection:

At the request of the Chairman of the Curators of this Academy, the undersigned begs leave to offer a Special Report upon the department of Ornithology in which, as Curator, he has been exclusively engaged.

Having had the honor of submitting a report of a similar character at the annual meeting in December 1847, I have now the pleasure of stating that the following collections, which had been partly received or were about to be received at that period, have arrived, and have been completely arranged in our Ornithological Galleries, within the past two years; viz. the very extensive collection of the Prince Massena of Paris, the collection of Mr. Bourcier of Lyons, Dr. Gambel's North American collection, and all the very valuable and interesting collections obtained by purchase and exchange in Europe by Mr. Edward Wilson; while of the Australian collection of the distinguished Ornithologist Mr. Gould, about two-thirds of the birds, and the entire collection of nests and eggs, have been received. The detention of the latter, has arisen from the fact that it was found expedient to have the specimens mounted in Europe, the collection having been *in skin* at the time of purchase.

It is perhaps unnecessary for me to again allude to the high scientific value of these collections or to the excellent condition in which they have reached their destination; I may state merely that all have fully answered the expectations of the gentlemen of this Academy, and have afforded great instruction and gratification to Zoologists and admirers of Natural History from all sections of our country. I beg to add that the extensive collections formed in the cities of Europe, expressly for this Society, by Mr. Edward Wilson, at the instance of his brother, our esteemed associate, Dr. Thomas B. Wilson, have proved to be of special interest. These were intended to supply deficiencies in the already comprehensive collections just named, an undertaking which appeared to me, I confess, very difficult at least, if not hopeless, but Mr. Wilson's success has been most remarkable. I have frequently alluded to his specimens in the papers which I have had the honor at various times of submitting to the Society; it is sufficient to say further, that in the course of my examinations of species, when I have found, as has often been the case, a specimen in an unusual stage of plumage, or some odd looking variety, serving the most useful purpose of illustration, it was pretty certain to turn out to be one of Mr. Wilson's collecting. To him we are also indebted for several undescribed species, and a large number new to the collection.

Our valued associate Mr. Edward Harris has presented to the Academy, during the past year, his entire collection. This was formed during the long period of his connection with Mr. Audubon, and embraces many specimens of the various species described by the latter gentleman, and of many other rare or little known American species; in fact, never since the arrival of Dr. Townsend from the Columbia river, in 1837, has a collection come into the possession of this Society of a character so interesting to the student of North American Ornithology. The peculiar character of Mr. Harris' collection will readily be perceived when I state that it contains the original specimens of several of the species described by Mr. Audubon, such as Quiscalus Breweri, Sturnella neglecta, Fringilla Harrisii and Lincolnii, Alauda Spraguei, Emberiza Bairdii, and Vireo Belli, numerous specimens of Emberiza pallida and grammaca, Fringilla aurocapilla, amoena and Townsendii, Pica hudsonica and Nuttallii, Alauda rufa, Erythrospiza frontalis, Sturnella hippocrepis, Pipilo oregona and arctica, Hirundo thalassina Sialia arctica and occidentalis, Tyrannula Saya, Parus melanotis, Troglodytes brevirostris and obsoletus, Vermivora Tolmæi, Lophortix plumifera. Tetrao obscurus and phasianellus, and many others equally difficult to obtain.

I must specially mention, however, a series of no less than 25 specimens of the intricately allied species of Colaptes, which inhabit our Western territory, referable to C. auratus, mexicanus, and Ayresii, which illustrates the judicious manner in which Mr. Harris formed his collection, and is additional, though unnecessary evidence of his excellent judgment in Ornithological science.

The distinguished naturalist, Mr. J. J. Audubon, has presented the original specimen of Caprimulgus Nuttallii, Aud., and Colaptes Ayresii, Aud., both of which are valuable additions, and the former, as yet, an unique specimen of a very remarkable species from California.

A collection of Asiatic birds, and an extensive collection of nests and eggs, have been presented by Professor Spencer F. Baird of Dickinson College. A collection of nests and eggs being then about to be formed in connexion with our Ornithological collection, this donation was peculiarly acceptable, and evinces the continued desire of this talented and eccomplished young naturalist to serve this Academy.

Wm. Gambel, M. D., has presented numerous specimens, among which are suites of specimens of Merula minor (Gm.), Wilsonii (Bonap.), and olivaceus (Giraud.), and other obscure American species; in the study and elucidation of which he has been eminently successful.

A. L. Heermann, M. D., has presented a large collection of eggs, collected by him in Florida, and numerous specimens of birds from the same locality. Of the latter I may enumerate as possessing especial interest, several specimens of Cymindis hamatus, Less., Vireo longirostris, Sw., Thalasseus regius, Gambel, Sternula frenata, Gambel, and also numerous specimens of Ardea rufescens, Gm., and of Ardea Pealei, Bonap., representing various stages of plumage, and demonstrating that the latter is a distinct species as originally described by Mr. Bonaparte.

W. S. Jones, M. D., of Riceboro, Georgia, has deposited the original and yet unique specimen of Picus Lecontei, Jones, a curious little tridactyle species discovered by him in Georgia, and possessing great interest as an addition to the fauna of this country.

Another addition to our fauna, the Anas Rafflesii, King, has been made this year, by E. Pilate, M. D., of Opelousas, Louisiana, a specimen of which, being the first ever observed within the limits of the United States, has been presented by him to this Society.

A specimen of Strix flammea, Linn., from Western Africa, very interesting on account of its locality, has been presented by our esteemed correspondent Mr. George N. Lawrence, of New York.

The Academy has also to acknowledge its indebtedness to Mrs. John B. Smith of this city, for a beautiful specimen of Nycthemerus pictus, (Linn.); to C. Wistar, M. D., for an interesting specimen of a dwarf variety of the common fowl; to Mr. William Ayr for a specimen of the Egretta alba, (Linn.)—to our valued associate Mr. Samuel Ashmead for various specimens collected by him at Cape May: to John G. Howard for two living specimens of Columbia cyanocephala, Linn., brought by him from Cuba, expressly for the Academy, and for other donations.

One of the most remarkable as well as valuable additions recently made to the Ornithological collection is the extensive collection of nests and eggs formed by Mons. O. des Murs, of Paris, author of the "Iconographie Ornithologique," now in the course of publication, and well known as an Ornithologist. This splendid collection, like nearly the whole of the present contents of our Ornithological galleries, came into possession of this Society through the influence of Messrs. Thomas B. and Edward Wilson. It embraces no less than 3450 specimens, being the eggs of 1281 species, from all parts of the world, in very perfect condition, many of which are to be obtained only with great difficulty.

I may be allowed to state in connexion with this subject, that Mr. Gould's collection of eggs previously alluded to, contain 976 specimens, or 303 species. The entire collection now in the Museum of the Academy, is but partially arranged, but deducting duplicates, it may safely be estimated as containing the eggs of about 1500 species, about 1200 of which are named.

I consider it proper to state here, that in the arrangement of the collection resulting from the combination of those above mentioned, the collection previously belonging to this Society has been carefully preserved. This will be found to contain not only many specimens of rare scientific value, (such as the original specimens of the species discovered by Dr. Townsend, many rare Mexican species from Dr. Burrough, and the fine Surinam collection from Dr. Hering) but also many highly prized mementoes of the friends and associates of our Society, to whose kind exertions the formation of the nucleus of our present extensive collection is to be attributed, such as Dr. Marmaduke Burrough, Dr. Ralph Hammersly, Mr. Thomas Ryan, Dr. George C. Leib, Dr. Wm. Blanding, Mr. Wm. Hembel, Dr. W. S. W. Ruschenberger, Dr. S. G. Morton, Dr. C. Hering, Dr. Jno. K. Townsend, Mr. W. S. Warder, Dr. J. Trudeau, Dr. A. L. Heermann, Dr. E. A. Abadie, Dr. C. Huffnagle, Mr. Richard C. Taylor, Mr. J. W. Rulon, Dr. Gavin Watson, Mr. Wm. S. Vaux, Dr. Thomas McEuen, Mr. John Speakman, Mr. A. F. Darley, Mr. Geo. W. Carpenter, Mr. Thomas Fisher, Mr. W. A. Foster, Dr. P. B. Goddard, Dr. C. W. Pennock, Mr. Robert Pearsall, Mr. J. Price Wetherill, Dr. S. W. Woodhouse, Mr. Samuel Ashmead, Mr. John G. Bell, and many others.

There is at present another large addition about being made to the collection of which a few specimens have already arrived. It is a collection formed during several years residence in the interior of India, by Captain Boys, of the British Army, and contains about 1000 specimens, among which are many new and rare objects. It is now in the hands of Mr. Gould, who wishes to make drawings of various specimens for his forthcoming work on the birds of Asia, and will probably arrive in the course of the ensuing year.

There is also now in the possession of the Academy and intended for its Museum, though not yet presented, a valuable collection made by our fellow member Mr. E. L. Kern, who has been attached as artist to several of the expeditions of Col. Fremont, and is now in California. This was collected by Mr. Kern during the expedition of 1845, and contains numerous specimens of such interesting species as Cathartes Californianus, Archibuteo regalis, Athene hypugea, Nucifraga Columbiana and Cyanocephala, (De Weid), Picus scalaris and melanopogon, Cyanocorax californicus and coronatus, Columba fasciata, Fringilla oregona, Paris minimus, septentrionalis and montanus, and many others.

Arrangements for further additions have also been completed, which will ensure all attainable desiderata arriving in the cities of Paris and London, and arrangements for exchange or purchase have been completed or are now in progress with several distinguished ornithologists, or with commercial naturalists in other parts of Europe; and I may state in addition, that our Museum will without doubt be further enriched by the researches of several of our members who have availed themselves of facilities at present existing for visiting California; among whom are Messrs. E. W. and R. H. Kern, who were attached to the late unfortunate expedition of Col. Fremont, Dr. Heermann, Mr. J. G. Bell and Dr. Gambel, and also by the acquisitions of one of our own most talented and enterprising young naturalists Dr. S. W. Woodhouse, now absent upon a government expedition to the Arkansas river.

I am enabled to state that the number of specimens of birds actually exhibited in the Museum of this Academy at the date of this Report, (Dec. 25th, 1849,) is nineteen thousand seven hundred and seventy-one (19,771). The number of species cannot at present be ascertained, but I hope to present such information to the Society at the earliest possible period; I should state, too, that several thousand duplicates are not exhibited.

The labelling and preparations for a catalogue of this immense collection are constantly progressing. The necessary investigations for these purposes have been found to embrace the examination of the descriptions of all known species, as far as practicable, and very frequently involve critical comparisons of both descriptions and specimens, which require the most diligent and cautious research. In fact, the proper study of the collection of the Academy will be found to demand little short of a general survey of the whole Ornithological kingdom, as well as the entire literature of Ornithology, which it is hoped will be regarded as sufficient apology for any apparent tardiness on the part of those engaged in that department.

Respectfully submitted by

JOHN CASSIN, Curator.

Hall of the Academy, December 25th, 1849.

The Society then went into an election for officers for the ensuing year, with the following result:—

President, ...	SAMUEL GEORGE MORTON, M.D.
Vice Presidents, ...	J. Price Wetherill, R. Eglesfeld Griffith, M. D.
Corresponding Secretary, .	John Cassin.
Recording Secretary, . .	Samuel Powel.
Librarian, ...	Wm. S. Zantzinger, M. D.
Treasurer, ...	George W. Carpenter.
Curators, ...	Joseph Leidy, M. D. Wm. S. Vaux, Samuel Ashmead, John Cassin,
Auditors, ...	Wm. S. Vaux, Robert Pearsall, Samuel Ashmead.
Publication Committee, . .	Wm. S. Vaux, R. E. Griffith, S. G. Morton, Thomas B. Wilson, R. Bridges, M. D.

Election of Member and Correspondents.

Wm. Robertson Grant, M. D., of Philadelphia, was elected a *Member*; and Mr. Wm. S. Sharpey, of London, and Mr. John D. Goodsir, of Edinburg, were elected *Correspondents*.

DONATIONS TO MUSEUM.

In November and December, 1849.

November 6th.

Skin of Estrelda amandava. From Mr. Thomas Desilver.

Mactra grandis, from Newport, R. I. From Dr. Morton.

Two hundred and seventy-five species of Fossils from the London Clay, Gault, Spectron Clay, and Oolite of Great Britain. From Dr. Wilson.

One hundred and fifty-four additional species from the Bennett collection. From the same.

November 13th.

A collection of Ferns from the Province of Veraguas, New Grenada. From Richard C. Taylor, Esq.

Coluber sirtalis, from the vicinity of Philadelphia. From Dr. Watson.

A collection of Fossils, principally Silurian, from Centre county, Pennsylvania. From Mr. J. M. McMinn.

Cranium of a Charib, from the Island of Nassau. Deposited by Dr. Morton.

November 20th.

Specimen of Testudinaria elephantopus, from South Africa. From Mr. John Watson, through Dr. Watson.

Pickeringite, Alcaparosa, Hydro-borate of Magnesia, and Nitrate of Soda, from Peru. From Dr. Joseph Leidy.

Numerous specimens, in spirits, of an insect, vulgarly termed "Snow bug, snow flea," &c., taken from the surface of the snow, Feb. 18, 1849, on the mountains, Centre Co., Pennsylvania. From Mr. J. M. McMinn of Centre county, Pennsylvania.

A Finnish skull, a Sclavonic from Moravia, and a cast of another from Wallachia, and a Narraganset Indian from the same. Deposited by Dr. S. G. Morton.

December 4th.

Siren lacertina, a Scorpio, and a Hippocampus, from South Carolina. From Dr. Bernard Henry.

A collection of Coleoptera, in spirits. From Dr. Watson.

December 18th.

Two specimens of Trigonocephalus contortrix, and one of Heterodon simus. From Dr. Watson.

Massive specimen of Brown Garnet, from Sussex county, New Jersey. Deposited by Mr. Vaux.

Three hundred and forty-eight specimens of Fossils from the coal formations of Great Britain; 32 do. from the Carboniferous Limestone of do.; 61 do. from the Magnesian Limestone of do.; 345 do. from the London Clay of do.; also six specimens of Calymene Blumenbachii from the Dudley Limestone of Great Britain. Presented by Dr. Wilson.

Dr. Wilson also presented 1596 species of recent shells of the following genera:

Nautilus, 2 species; Argonauta, 7; Carinaria, 1; Cleodora, 2; Conus, 165: Cypræa, 84; Ovulum, 10; Cymba, 3; Melo, 7; Voluta, 31; Oliva, 61; Ancillaria, 16; Marginella, 55; Erato, 3; Mitra, 137; Columbella, 70; Eburna, 3; Terebra, 50; Nassa, 61; Buccinum, 65; Planaxis, 12; Mangelia, 3; Strombus, 34; Oniscia, 2; Pterocera, 3; Rostellaria, 1; Struthiolaria, 2; Murex, 71; Ranella, 26; Triton, 50; Dolium, 3; Magilus, 1; Harpa, 4; Monoceros, 5; Purpura, 5; Ricinula, 19; Cassis, 19; Cerithium, 53; Turritella, 19; Turbinella, 15; Fasciolaria, 9 ; Fusus, 34 ; Pyrula, 16 ; Pleurotoma, 39 ; Cancellaria, 21; Phasianella; 2 ; Littorina, 33 ; Margarita, 3 ; Turbo, 31 ; Trochus, 85 ; Rotella, 8 ; Phorus, 3 ; Solarium, 9 ; Delphinula, 12 ; Scalaria, 28 ; Eulima, 4 ; Rissoa, 34.

Dr. Robert E. Griffith presented 3698 species of recent Shells, of the following genera :

Perna, 14 species ; Malleus, 2 ; Avicula, 13 ; Lima, 9 ; Hinnita, 1 ; Pecten, 60, Plicatula, 2 ; Spondylus, 15 : Ostrea, 23 ; Vulsella, 2 ; Placuna, 2 ; Anomia, 9 ; Terebratula, 10 ; Lingula, 2 ; Orbicula, 2 ; Crania, 1 ; Hyalæa, 6 ; Cleodora, 1 ; Chiton, 45 ; Patella, 63 ; Siphonaria, 6 ; Lottia, 2 ; Dentalium, 9 ; Cemoria, 2 ; Umbrella, 2 ; Parmaphorus, 2 ; Emarginula, 10 ; Fissurella, 37 ; Pileopsis, 5 ; Hipponix, 8 ; Calyptræa, 10 ; Dispotæa, 14 ; Crepidula, 20 ; Ancylus, 7 ; Bullæa, 1 ; Bulla, 38 ; Aplysia, 1 ; Vitrina, 3 ; Helix, 475 ; Helicina, 21 ; Pupina, 1 : Pupa, 72 ; Clausillia, 85 ; Bulimus, 102 ; Partula, 7 ; Achatinella, 22 ; Achatina, 38 ; Succinea, 20 ; Atricula, 32 ; Ringicula, 1 ; Scarabæus, 4 ; Cyclostoma, 68 ; Truncatella, 8 ; Planorbis, 52 ; Physa, 22 ; Lymnæa, 50 ; Melania, 130 ; Anculosa, 22 ; Eulima, 6 ; Io, 2 ; Melanopsis, 9 ; Rissoa, 20 ; Pirena, 16 ; Valvata, 9 ; Paludina, 64 ; Fossarus, 1 ; Ampullaria, 20 ; Ampullacera, 1 ; Navicella, 3 ; Neritina, 91 ; Natica, 65 ; Ianthina, 4 ; Velutina, 3 ; Sigaretus, 9 ; Stomatia, 2 ; Haliotis, 32 ; Tornatella, 6 ; Pyramidella, 8 ; Vermetus, 5 ; Scalaria, 20 ; Skenea, 1 ; Delphinula, 7 ; Solarium, 9 ; Rotella, 5 ; Littorina, 32 ; Turbo, Trochus and Monodonta, 216 ; Planaxis, 6 ; Monoptygma, 1 ; Phasianella, 14 ; Turritella, 18 ; Cerithium, 64 ; Pleurotoma, 58 ; Turbinella, 32 ; Cancellaria, 16 ; Fasciolaria, 12 ; Fusus, 66 ; Pyrula, 24 ; Struthiolaria, 1 ; Ranella, 40 ; Murex, 61 ; Triton, 43 ; Rostellaria, 6 ; Pterocera, 10 : Strombus, 66 ; Cassidaria, 8 ; Cassis, 28 ; Ricinula, 26 ; Purpura, 115 ; Trichotropis, 1 ; Monoceros, 10 ; Concholephas, 1 ; Harpa, 9 ; Dolium, 14 ; Buccinum, 97 ; Eburna, 4 ; Terebra, 30 ; Columbella, 48 ; Mitra, 70 ; Voluta, 26 ; Marginella, 34 ; Ovula, 9 ; Cypræa, 136 ; Terebellum, 1 ; Ancillaria, 5 ; Oliva, 75 ; Conus, 150 ; Spirula, 1 ; Nautilus, 2: Argonauta, 4 ; Sepia, 1.

DONATIONS TO LIBRARY.

In November and December, 1849.

November 6th.

Proceedings of the American Philosophical Society. Vol. 5, No. 43. April to September, 1849. From the Society.

Descriptions of forty-four supposed new species and varieties of operculated land-shells, from Jamaica. By C. B. Adams. From the Author.

Revision of the North American Tailed-Batrachia, with descriptions of new genera and species. By Spencer F. Baird. From the Author.

The following were presented by Dr. Wilson, on condition that they be not taken from the Hall:

Revue et Magasin de Zoologie. Par MM. Guérin-Meneville et Focillon. No. 7, for 1849.

Comptes Rendus. Tome 29. Nos. 5, 6, 7, 8.

The London Athenæum, for September, 1849.

Annals and Magazine of Natural History. Vol. 4. Second Series. No. 20.

Elements of British Entomology. By W. E. Shuckard. Part 1. 8vo.

Reports of the Proceedings of the Literary and Philosophical Society of Liverpool, from 1845 to 1848 inclusive.

Reports of the Committee of the Liverpool Royal Institution, from 1837 to 1849 inclusive.

Twenty-fifth Annual Report of the Literary and Philosophical Society at Kingston upon Hull, for the session ending May, 1848.

An Essay on the credibility of the existence of the Kraken, Sea Serpent, and other Sea monsters.

First Report of the Liverpool Natural History Society.

Address delivered at the meeting of the Proprietors of the Liverpool Royal Institution, Feb., 1825.

Proceedings of the Yorkshire Philosophical Society, for 1847 and 1848.

De Musca-Cerambyce seu Cerambyce spurio. Epistola J. C. Schæfferi.

A decade of curious insects; some of them not described before. By J. Hill, M. D.

Lectures on Erpetology; delivered at the British Institution, by Dr. Riley.

Die gattung Torpedo in ihren naturhistorischen und antiquarischen Beziehungen erlautert. Von J. F. M. v. Olfus. 4to.

Zur Naturgeschichte der Gattung Calandra, nebst Beschreibung einer neuen Art: Calandra Sommeri. Von H. Burmeister.

Vorschlag zu einer neuen in die Classe der Glossaten einzuführenden Gattung Platypteryx. Von J. H Laspeyres.

Beiträge zur Naturgeschichte der Rankenfüsser (Cirripedia). Von H. Burmeister.

An abstract of the characters of Ochsenheimer's genera of the Lepidoptera of Europe. By J. G. Children.

Dissertatio sistens conspectum Historiæ Entomologiæ, &c. Auctor J. L. C. Gravenhorst.

Dissertatio inauguralis de Coccionellæ natura viribus et usu. Auctore J. G. Linck.

An account of the rare fish Regalus glisne, caught off Cullercoats, 25th March, 1849.

Remarks on the Linnean Orders of Insects, forming a short and familiar introduction to the study of Entomology. By a member of the Manchester Natural History Society.

Joh. Caspar Fucklin's Verzeichness der ihm bekannter Schweizerisched Insekten. 4 to.

D. Philipp Jermin's Abhandlungen von der Surinamischen Kröte oder Pipa, &c.

The Genera of Diurnal Lepidoptera. By Edward Doubleday. Part 31.

Transactions of the Zoological Society of London. Vol. 1. Part 2.

Philosophical Transactions of the Royal Society of London. 1841—1845. 4to.

Observationes Oryctognosticæ et Chemicæ de Hauyna, et de quibusdam fossilibus quas cum hæc concreta inveniuntur. Auctore Leopold Gmelin.

Entdeckung einer dem Kreuz-steine. Von F. A. von Heinitz.

Traité Physique et Microscopique de l'Asbeste, l'Amiante le Lin de Pierre ou de Terre et de quelques autres fossiles qui y ont du rapport. Traduit de l'Allemand de feu M. F. Ledemuller.

Berichte von der Königlichen Zootomischen Anstalt zu Würzburg. Von Dr. A. Kölliker.

An essay towards a natural history of Serpents. By Charles Owen, D. D. 4to.

Petri Artedi Synonymia Piscium Græca et Latina emendata, &c. Auctore J. G. Schneider. 4to.

Monographiæ Curculionum, Caraborum et Staphylinorum Sueciæ. A. Gustavo de Paykull. (In one vol. 8vo.)

Transactions of the Manchester Geological Society. Vol. 1. 8vo.

Les Genres des Insectes de Linné; constatis par divers échantillons d'Insectes d'Anglèterre. Par J. Barbut. 4to.

The Entomologist; conducted by Edward Newman. 8vo.

An account of the Fishes of the River Ganges and its branches. By Francis Hamilton, (formerly Buchanan,) M. D. 4to, and Atlas 4to.

The Cabinet of Oriental Entomology. By J. O. Westwood, Esq. 4to.

British Butterflies and their transformations. By H. N. Humphreys and J. O. Westwood. 4to.

Descriptions and figures of two hundred Fishes collected at Vizagapatam, on the coast of Coromandel. By Patrick Russell, M. D. 2 vols. folio.

Verzeichniss meiner Insecten-Samlung oder Entomologische Handbuch für Liebhaber und Sammler. Von Jacob Sturm. 8vo.

M. T. Brünnichii Entomologia Hafniæ. 1764. Monographia Tenthredinetarum synonymia extricata. Auctore Am. Le Pelletier St. Fargeau. (In one vol. 8vo.)

Petri Artedi Sueci medici Ichthyologia, sive opera omnia de Piscibus vindicavit, recognovit, &c. Carolus Linnæus, M. D. 8vo.

J. Bapt. Schluga, M. D., primæ lineæ cognitionis Insectorum. 8vo.

Fossils of all kinds digested into a method suitable to their mutual relations and affinity. By John Woodward, M. D. 8vo.

Instructions for collecting, rearing and preserving British and foreign Insects. By Abel Ingpen. Second edition. 12mo.

Memoirs of the Literary and Philosophical Society of Manchester. First series. Vols. 1—5; Second series, Vols. 1, 2 and 5. 8vo.

Memoirs of the Wernerian Society for the years 1831-'37. Vol. 7. 8vo.

Reports of the British Association for the advancement of Science, from 1831 to 1845 inclusive, and also for 1848. 8vo.

Memoires pour servir à l'histoire des Insectes. Par Charles De Geer. 7 vols. 4to.

Serpentium Brasiliensium species novæ, ou histoire naturelle des éspéces nouvelles de Serpens recueillies et observées pendant le voyage dans l'intérieur du Brésil dans les Années 1819-'20: publié par Jean de Spix. 4to.

Animalia nova; sive species novæ Testudinum et Ranarum quas in itinere per Brasiliam an. 1817-'20 suscepto, collegit et descripsit Dr. J. B. de Spix. 4to.

Illustrations of British Entomology. By James F. Stephens. Haustellata, Vols. 1—4, Mandibulata, vols. 1—7, and Supplement. 8vo.

British Entomology: being illustrations and descriptions of the genera of Insects found in Great Britain and Ireland. By John Curtis. Vols. 1—16. 8vo.

November 13th.

The Medical Examiner, conducted by F. G. Smith, M. D. and David Tucker, M. D. Vol. 5. Nos. 1 to 11. January to November, 1849. From the Editors.

On Platygonus compressus: a new fossil Pachyderm. By John L. Le Conte, M. D. From the Author.

Notice sur le Crioceras Voronzovii de Sperk: par M. Fischer de Waldheim. From the Author.

Catalogue of Skulls of Man and the Inferior Animals in the collection of S. G. Morton, M. D. Third edition 1849. From the Author.

Contributions to Physiology. By Bennett Dowler, M. D. From the Author.

Contributions to Conchology, Nos. 2 and 3. Descriptions of new Helicidæ from Jamaica. By C. B. Adams. From the Author.

The American Journal of Science and Arts. Second series. No. 24. From the Editors.

Descriptions and Analyses of several American minerals. By B. B. Silliman, Jr., M. D. From the Author.

Deutschlands Fauna, &c. Von Jacob Sturm: 5 Abtheilung. Die Insekten 19th Bandchen. From F. & J. W. Sturm.

Zum Andenken an Dr. J. Sturm. Von J. W. Hilpert. From the same.

Dr. Wilson presented the following on the usual condition:

Museum diluvianum quod possidet J. J. Scheuchzer, M. D. 8vo.

Manuel élémentaire de Géologie appliquée à l' Agriculture et à l'Industrie. Par Nérée Boubée. 12mo.

Scriptural Geology. 2 vols. 8vo.

Guide de Géologie-voyageur. Par Ami Boué. 2 vols. 8vo.

Uebersicht der geognostichen Verhältnisse Thüringens und des Harzes.

Die Riesenthiere der Urwelt oder das neuentdeckte Missourium Theriste caulodon und die Mastodontoiden im Allgemeinen und Besondern. Von Dr. Abert C. Koch. 8vo.

Beiträge zur fossilen Flora der Juraformation Württembergs. Von J. G. Kurr.

Naturgeschichte des Niederdeutschlandes und anderen Gegenden. Von J. W. C. A. Freyhernn von Hupsch. Part 1. 4to.

Eduardi Luidii Lythophylacei Britannici Ichnographia. 8vo.

Meditationes physico-chemicæ de origine Mundi, imprimis Geocosmi ejusdamque Metamorphosa: conscripta a J. G. Wallerio. 8vo.

Palæologica sur Geschichte der Erde und ihrer Geschöpfe. Von H. von Meyer. 8vo.

Outlines of an attempt to establish a knowledge of extraneous fossils, on scientific principles. By Wm. Martin. 8vo.

Palæontographical Society. Monograph of the Fossil Reptilia of the London clay, part 1, Chelonia, by Profs. Owen and Bell. Do. of the Eocene Mollusca. By F. C. Edwards. Part 1. Cephalopoda, (in one vol. 4to.)

Beschreibung murkwürdiger Krauter-Abdrücke und Pflanzen Versteinerungen, Ein Beitrag zur Flora der Vorwelt. Von E. F. von Schlotheim. No. 1. 4to.

Ueber das Gebirgssystem der Sierra Nevada und das Gebirge von Jaen im Südlichen Spanien. Von J. F. L. Hausmann.

Neue Gattungen fossilen Krebse aus Gebilden von bunten Sandstein bis in die Kreide. Von H. von Meyer.

Höhen Messung einiger Oste und Berge-Zwischen Gotha und Coburg, &c. Von K. E. A. Von Hoff

Fossilia Ægyptiaca Musei Borgiani Velitris descripsit Gregorius Wad.

November 20th.

Insecta Caffraria annis 1838–'45, a J. A. Wahlberg collecta; descripsit C. H. Boheman. Part 1. Fascic 1. Coleoptera. 8vo. From Prof. Retzius, of Stockholm.

The following were presented by Dr. Wilson on the usual condition :

Extrait du cours de Zoologie du Muséum d'histoire naturelle sur les animaux sans vertébres. Par M. De Lamarck. 8vo.

History of British Mollusca and their Shells. By Prof. Forbes and S. Hanley. Part 20. 8vo.

Insectorum sive minimorum animalium theatrum : olim ab Ed. Wattomo, &c. inchoatum, tandem T. Morpeti perfectum. Folio.

Erd-und Süswasser-Gasteropoden der Schweiz. Von J. D. W. Hartmann. 1 Band. 8vo.

An Epitome of Lamarck's arrangement of Testacea. By Charles Dubois. 8vo.

Die Land-und Süsswasser-Mollusken von Java. Von Albert Mousson. 8vo.

Die Südafrikanischen Mollusken von Prof. Dr. Ferdinand Krauss. 4to.

Die Blasenwürmer. Ein Monographischer Versuch. Von Dr. A. Tschudi.

Abhandlung von einen Geschelte vichschalichter Conchylien mit sichtbaren Gelenken weiche beym Linné Chitones heissen.

D. Edwardi Eichwaldi Geognostico-Zoologicæ per Ingriam Marisque Baltici-Provincias nec non de Trilobitis observationes.

Maris Protogæi Nautilos et Argonautas vulgo Cornua Ammonis in Agro Coburgico et vicino reperiundos : Descripsit, &c. D. J. G. M. Reinecke.

Descripto et iconica delineatio novi generis Vermium, Stomachidæ dicti in corpore humano hospitantium. Auctore C. Perebroom.

Conchologia iconica. By L. Reeve. No. 76.

Histoire abrégée des Coquillages de Mer. Par S. L. P. Cubieres. 4to.

December 14th.

Additional observations on the Osteology of the Iguanodon and Hylæosaurus. By G. A. Mantell. From the Author.

Insunt J. F. Meckelii Additamenta ad historiam Molluscorum Piscium et Amphibiorum. Deposited by Dr. Griffith.

J. F. Bolten, M. D., ad Carolum Linné Epistola de novo quodam Zoophytorum genere. From the same.

Rariora Naturæ et Artis item de re medica : oder settenherten der Natur und Kunst des Kundmannischen Naturalien-Cabinets, wie auch der Arkeney-Wissenschaft. Von D. C. Kundmann. Folio. From the same.

Dr. Wilson presented the folloming on the usual condition :

Revue et Magasin de Zoologie. No. 8. 1849.

Comptes Rendus. Nos. 9—13. Tome 29.

Annals and Magazine of Natural History. Vol. 4. Second series. No. 21.

The London Athenæum. October, 1849.

Zeitschrift für Malakozoologie. Von K. T. Menké und Dr. Pfeiffer. Nos. 3, 4, 1849.

Conchylogia iconica. By L. Reeve. Parts 77, 78.

Phycologia Britannica. By Wm. H. Harvey, M. D. Part. 43.

Illustrations of British Mycology. By Mrs. T. J. Hussey. Part 29 and 30.

History of British Mollusca and their Shells. By Prof. Forbes and S. Hanley. Part 21.

The Quarterly Journal of the Geological Society. Vol. 5. Part 1.

Ueber den charakter der Vegetation auf den Inseln des Indischen Archipels. Von Dr. Reinwardt.

Die Golazberge in der Tschitscherei Ein Beitrag zur Botanischen Erdkunde von L. von Heerfler.

A calender of Flora composed during the year 1809 at Washingtion. By George Crosfield.

Entozoorum sive Vermium Intestinalium historia naturalis : Auctore C. A. Rudolphi. 2 vols 8vo.

Geological and Mining Surveys of the Coal Districts of the counties of Tyrone and Antrim in Ireland. By Richard Griffith. 8vo.

Entozoorum synopsis. Auctore C. A. Rudolphi. 8vo.

Erster Nachtrag zur Naturgeschichte der Eingeweidewürmer von J. A. E. Goeze. 4to.

Entomologische Beyträge zu des Ritter Linné zwölften ausgabe des Natursystems von J. A. E. Goeze. 3 vols. in 6. 8vo.

Schriften der Naturforschenden Gesellschaft zu Leipzig, Vol. 1st. 4to.

Tentamen Herpetologiæ: Auctore J. T. Klein. 4to.

The internal structure of fossil vegetables found in the Carboniferous and Oolitic deposits of Great Britain; described, &c., by H. T. M. Witham. 4to.

A Flora of Liverpool. By T. B. Hall; and an appendix by Wilson Armistead. 8vo.

Joannis Raii de variis plantarum methodis dissertatio brevis. 8vo.

The Language of Botany. By Thomas Martyn. 8vo.

Primitiæ Floræ Sarnicæ. By C. C. Babington. 8vo.

A botanical guide of the Flowering plants, &c., found indigenous within sixteen miles of Manchester. By Richard Buxton. 8vo.

Flora Metropolitana. By Daniel Cooper. 8vo. and supplement 8vo.

December 11*th*.

Iconographie Ornithologique. Par O. Des Murs. 12th Liv. From Mr. Ed. Wilson.

Dr. Wilson presented the following, on condition that they be not taken from the Hall.

The Naturalists' guide for collecting and preserving subjects of Natural History and Botany. By William Swainson.

Catalogue of the Australian Museum, 1837.

Essay on the method of studying Natural History. By Richard Kentish.

Catalogue of the Mammalia in the museum of the Zoological Society of London. 2d edition.

Notice of the subjects of Natural History in the Museum of the Liverpool Royal Institution. 12mo.

List of Hymenopterous Insects in the British Museum. Part 2. Chalcidites: list of Dipterous Insects in the same, part 2.

Synopsis of the contents of the British Museum. 54th edition.

The Voyager's Companion; or Shell-collector's Pilot, &c. By J. Mawe, 4th edition, 12mo.

Treatise on the art of preserving objects of Natural History. By W. Bullock. 2nd edition.

Christoph. W. J. Gattereri Breviarium Zoologiæ. Pars 1. Mammalia. 8vo.

Short sketches of the wild sports and Natural History of the Highlands. From the Journal of Charles St. John. 8vo.

The history of Brutes. By Wolfgangus Fransius, D. D., and now resolved into English by N. W. 12mo. 1670.

British Annual and Epitome of the progress of Science, for 1837, 1838 and 1839. By Robert D. Thompson, M. D. 3 vols. 12mo.

Museum Ludovicæ Ulricæ Reginæ Suecorum, &c. A Carolo v. Linné. 8vo.

Elements of the natural history of the Animal Kingdom. By C. Stewart. 2d edition. 2 vols.

A collection of letters illustrative of the progress of Science in England, from the reign of Queen Elizabeth to that of Charles II. Edited by C. Halliwell. 8vo.

Nouveau tableau du Regne Animal. Par R. P. Lesson. Mammifères. 8vo.

Martini Listeri Historiæ Animalium Angliæ tres tractatus. 8vo.

Catalogue systematique du Cabinet d'Ornithologie et de la collection de Quadrumanes de C. J. Temminck. 8vo.

Catalogue of the Museum of the Liverpool Royal Institution. 8vo.

The Zoological Magazine, or Journal of Natural History. 8vo.

Essai sur l'histoire naturelle par C. G. Chesnon. 8vo.

Zur Angewandten Naturgeschichte und Physiologie: Von H. G. Brown. 8vo.

The Sea-side book. By W. H. Harvey, M. D. 8vo.

Francisci Redi Experimenta circa res diverses naturales speciatum illas quæ ex Indiis adferuntur. 12mo.

Fauna der Galizisch-Bukowinischen Wirbelthiere. Von Dr. A. Zowadski. 8vo.

Anfangsgründe der Naturwissenschaft für die Jugend von Dr. J. Brand. 8vo.

The Natural History of Ireland, in three parts ; by several hands. 4to.

Saggio d'Osservazioni sopra C'isoladi Cherso ed Orsero d'Alberto Fortis. 4to.

Zwei Worte über den jetzigen Zustand der Naturgeschichte. Von Dr. C. V. Baer. 4to.

Elenchus Tabularum Pinacothecarum atque nonnullorum Cimeliorum in Gazophylacis Levini Vincint. 4to.

Arithmonomia naturalis seu de numeris in rerum natura tentamen e Mineralogia, Botania et Zoologia illustratum. Auctore Alberto Sonnenberg. 4to.

An abridged catalogue of the Saffron Walden Museum. 8vo.

An history of the wonderful things of nature. Written by Johannas Johnstonus, and now rendered into English by a person of quality. 4to. 1657.

Produzione naturali che si retrovano nel museo Ginanni in Ravenna. 4to.

J. T. Klein summa dubiorum circa classes Quadrupedum et Amphibiorum in celebris domini C. Linnei Systemate Naturæ. 4to.

Elements of Natural History, or an introduction to systematic Zoology. By J. A. Hinton. 4to.

Gotthelf Fischer's Naturhistorische Fragmente. 4to.

Notices sur les animaux noveaux ou peu connus du Musée de Genève. Par F. J. Pictet. 4. Livs. in 3. 4to.

Johannes Herrmann observationes Zoologicæ, opus posthumum edidit F. L. Hammer. 4to.

Observations sur l'histoire naturelle sur la physique et sur la pointure. 2 vols. in one. 4to.

The Natural history of Oxfordshire. By R. Plot, LL. D. Folio.

A philosophical account of the works of Nature. By Richard Bradley. 4to.

Dell' Historia naturale de Ferrante Imperato apolitano libri 28. Folio.

The Edinburgh Journal of Natural History, and of the Physical Sciences, conducted by W. Macgillivray. The Animal Kingdom of the Baron Cuvier, enlarged and adapted to the present state of Zoological Science, &c., (in one vol. folio.)

The Natural History of Lancashire, Cheshire, and the Peak, in Derbyshire, &c. By Charles Leigh, M. D. Folio.

Museum Wormianum: seu historia rerum rariorum quæ Hasniæ Danorumin œdibus authoris serventur: adornata ab Olao Worm, M. D. Folio.

Museum Tessinianum. Folio.

Eight unpublished Plates to Indian Zoology by Major Hardwicke. Folio.

Abbildungen aus dem Thierreiche in Kupfergestochen von J. C. Susemihl. Ornithologie 4 Hefts, Entomologie 1 Heft, Amphibiologie 1 Heft. 4to.

Die vollständigste Naturgeschichte des In-und Auslandes. Von H. G. L. Reichenbach. Aves Gallinaceæ. 4to.

Essays upon Natural History and other miscellaneous subjects. By George Edwards. 8vo.

Medical Zoology and Mineralogy. By John Stephenson, M. D. 8vo.

The Naturalist's Pocket-Book, or Tourist's Companion. By George Graves. 8vo.

Elements of Natural History, adapted to the present state of the science. By John Stark, 2 vols. 8vo.

Nachrichten von den Kaiserl.-österreicheschen Naturforschern in Brasilien und den Resultaten ihrer Betriebsamkeit. Parts 1 and 2. 8vo.

An Essay towards a natural history of the County of Dublin. By John Rutty, M. D. 2 vols. 8vo.

Synopsis of the Newcastle Museum. By George Townshend Fox, Esq. 8vo.

Mémoir instructif sur la maniere de rassembler, de preparer, &c., less diverses curiosités d'histoire naturelle. 8vo.

An essay towards a natural history of Cumberland and Westmoreland. By Thos. Robinson. 8vo.